TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, [redacted] 1912.

No. [redacted] 118.

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

THE BALTIMORE AND OHIO RAILROAD COMPANY.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF WEST VIRGINIA.

FILED AUGUST 5, 1912.

(22201)

SUPREME COURT OF THE UNITED STATES,

OCTOBER TERM, 1910.

No. 670.

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

THE BALTIMORE AND OHIO RAILROAD COMPANY.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF WEST VIRGINIA.

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a In the Circuit Court of the United States for the Northern District of West Virginia, at Parkersburg.

THE UNITED STATES, PLAINTIFF, PLAINTIFF in error, v. THE BALTIMORE & OHIO RAILROAD COMPANY, a corporation, defendant, defendant in error.	Upon indictment No. 3491 for violation of act of March 3, 1899.

Hon. H. Roy Waugh, U. S. attorney, Parkersburg, West Virginia, attorney for plaintiff in error.

Van Winkle & Ambler, Parkersburg, West Virginia, attorneys for defendant in error.

1 Be it remembered that, heretofore, to-wit: At a Circuit Court of the United States for the Northern District of West Virginia, continued and held at Parkersburg, in said district, on the 8th day of June, 1909, the following order was made and entered of record, to-wit:

Order empaneling grand jury.

The following named persons, to-wit: George W. Johnson (foreman), Ai Drain, David A. Clowser, Thomas J. Wilson, William H. Hall, Fred Cottrill, Eli H. Morgan, Harry E. Gorby, Guy Starcher, Francis M. Triplett, Kos L. Whytsell, John A. Davis, George W. Logsdon, Robert A. McPherson, Benjamin H. Butcher, John Holt, Albert J. White, Frank Ball, Edward A. McDowell, and Loring C. Wyre, were sworn a grand jury of inquest within and for the body of this district, who, having received their charge, retired to their room to consider of the business before them, and after a time returned into court and not having completed their business at the time for the adjournment of the court, were adjourned until to-morrow morning at ten o'clock.

And at another day, to-wit: On the 10th day of June, 1909, the following order was made and entered of record, to-wit:

Order filing indictment.

The grand jury which was empaneled and sworn on a former day of this term as a grand jury of inquest within and for the body of this district, this day again appeared pursuant to their adjournment, and again retired to their room to consider further of the business before them, and after a time returned into court and presented indictments against the following named persons, to-wit:

* * * * * * *

2 3491. Baltimore and Ohio Railroad Company, its president, managers, and company, for violation of act of March 3, 1899, a true bill; and they, having completed the business before them,

were discharged from further attendance upon this court at this term as such grand jurors.

Indictment.

(Filed June 10, 1909.)

UNITED STATES OF AMERICA,
Northern District of West Virginia, ss:

In the Circuit Court of the United States, in and for the district aforesaid, at the June term thereof, A. D. 1909, at Parkersburg.

The grand jurors of the United States, impaneled, sworn, and charged at the term aforesaid, of the court aforesaid, on their oath present, that on the day of November, 1906, and up to and including the date of the finding of this indictment, the president, managers, and company of the Baltimore and Ohio Railroad Company, a corporation existing under the laws of the State of Maryland, and having its principal office in the city of Baltimore and State of Maryland, and from the said day of November, 1906, until the date of the finding of this indictment, both inclusive, and within the county of Wood and State of West Virginia, in the district aforesaid, and within the jurisdiction of this court, said president, managers, and company of the Baltimore and Ohio Railroad Company, owned, controlled, and operated a certain railroad bridge, commonly known and designated as the Ohio River Bridge, across the Ohio River between Parkersburg, West Virginia, and Belpre, Ohio, in the said county of Wood. The said Ohio River is one of the navigable waterways of the United States, extending through the said State of West Virginia, and county of Wood, in a southwesterly direction.

3 And the grand jurors aforesaid, on their oath aforesaid, do further present, that the Secretary of War of the United States, having good reason to believe that the said bridge was an unreasonable obstruction to the free navigation of the said river, on account of insufficient heighth and length of spans, gave notice to the said president, managers, and company of the Baltimore and Ohio Railroad Company, to so alter said bridge as to render navigation through and under it reasonably free, easy, and unobstructed.

That before giving said notice to alter said bridge hereinafter particularly set out, the said Secretary of War gave the said president, managers, and company of the Baltimore and Ohio Railroad Company reasonable opportunity to be heard touching the premises aforesaid, to wit: Said Secretary of War, before giving said notice directed that a public hearing be held after due notice to interested parties relative to the proposed alteration of said bridge, as set forth in the notice from the Secretary of War to the president, managers, and company of the Baltimore and Ohio Railroad Company, hereinafter recited and set forth, and in pursuance of the said direction of the said Secretary of War, after due notice to the president, mana-

gers, and company of the Baltimore and Ohio Railroad Company, among others, such public hearing was held at room 402, custom-house, northeast corner Fifth and Walnut Streets, in the city of Cincinnati, and State of Ohio, on the 2nd day of October, 1906, by Major Wm. T. Rossell, Lieut. Col. Corps U. S. A. At the said hearing, the said president, managers, and company of the Baltimore and Ohio Railroad Company, by its president and by counsel appeared, and were heard relative to the proposed alteration of the said Baltimore and Ohio Railroad bridge.

A report of said hearing was duly forwarded to the Secretary of War, through the Chief of Engineers of the United States Army.

On the date of the said hearing, and continually thereafter,
4 up to and including the date of the finding of this indictment, the president, managers, and company of the Baltimore and Ohio Railroad Company, owned and controlled and operated the said bridge across the said Ohio River.

After having given said president, managers, and company of the Baltimore and Ohio Railroad Company a reasonable opportunity to be heard, as aforesaid, the Secretary of War gave notice to said company to alter said bridge across said Ohio River, a copy of which notice is as follows, to wit:

WAR DEPARTMENT,
Washington City, November 7, 1906.

To the Baltimore & Ohio Railroad Company:

Take notice that whereas the Secretary of War has good reason to believe that the bridge of the Parkersburg Branch Railroad Company, operated or controlled by the Baltimore & Ohio Railroad Company, across the Ohio River, at Parkersburg, West Virginia, is an unreasonable obstruction to the free navigation of the said Ohio River (which is one of the navigable waterways of the United States) on account of insufficient length of channel spans;

And whereas the following alterations, which have been recommended by the Chief of Engineers, are required to render navigation under it reasonably free, easy, and unobstructed, to wit: The removal of pier No. 38, and the conversion of spans Nos. 38 and 39 into one channel span;

And whereas to December 1, 1908, is a reasonable time in which to alter the said bridge as described above:

Now, therefore, in obedience to, and by virtue of, section eighteen of an act of the Congress of the United States entitled "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other pur-
poses," approved March 3, 1899, I, Robert Shaw Oliver, Act-
5 ing Secretary of War, do hereby notify the said Baltimore & Ohio Railroad Company, to alter the said bridge as described above, and prescribe that said alterations shall be made and completed on or before December 1, 1908.

ROBERT SHAW OLIVER,
Acting Secretary of War.

And in the said notice the said Secretary of War specified the changes required to be made in the said bridge in order to render it not an obstruction to the navigation of the said Ohio River. The method of changing said bridge specified by said Secretary of War so as to render navigation through and under it reasonably free, easy, and unobstructed is as follows:

"The removal of Pier No. 38 and the conversion of spans Nos. 38 and 39 into one channel span."

The said changes to the said bridge set forth by the said Secretary of War in the said notice to the said president, managers, and company of the Baltimore and Ohio Railroad Company had, prior to the issuance of the said notice, been recommended to the said Secretary of War by the Chief of Engineers of the United States Army as being required in order that the navigation under said bridge might be rendered free, easy, and unobstructed.

And the grand jurors aforesaid, upon their oath aforesaid, do further present that the said Secretary of War, in and by said notice, dated November 7th, 1906, prescribed a reasonable time in which to make the changes specified, to wit: Prescribed and declared that the said alteration of the said bridge hereinbefore set forth should be completed on or before the 1st day of December, 1908.

Said notice was served upon the said president, managers, and company of the Baltimore and Ohio Railroad Company, in
6 accordance with the laws of the State of Maryland, wherein the said notice was served, and in accordance with the laws of the United States, on the 12th day of November, 1906, at the city of Baltimore, in the State of Maryland, a duplicate thereof having been personally delivered to Mr. Oscar G. Murray, president of the said Baltimore and Ohio Railroad Company.

And the grand jurors aforesaid, upon their oath aforesaid, do further present that the said period included between the service of the said notice on the said 12th day of November, 1906, and the date on which said alterations were to be completed under the aforesaid order of the Secretary of War, to wit, December 1st, 1908, was full, ample, and reasonable time in which to make the alteration prescribed by the said Secretary of War in the said order, yet so it is that at the end of the said period, to wit, on December 1st, 1908, the said alteration was not made, and has not since been made; but to make the same the said president, managers, and company of the Baltimore and Ohio Railroad Company have wilfully failed and refused, to wit, for the period aforesaid, and hereby have wilfully and unlawfully failed and refused to comply with the said lawful order of the said Secretary of War, and during said period, although said alteration prescribed by the Secretary of War was not made, have wilfully maintained the said bridge across the said Ohio River.

And the grand jurors aforesaid, upon their oath aforesaid, do further present that the said president, managers, and company of the Baltimore and Ohio Railroad Company have remained in default as aforesaid for and during the month of December, 1908, and ever

since, and have wilfully and unlawfully failed, refused, and neglected to comply with the said lawful order of the Secretary of War, contained in the notice hereinbefore set forth, by unlawfully and wilfully failing, refusing, and neglecting, for and during said month and ever afterwards, to make the alterations to the said bridge prescribed in said notice, and during said month and forever
7 afterwards have wilfully and unlawfully failed and refused to make the alteration in the said bridge over the Ohio River, contrary to the form of the act of Congress in such case made and provided, and against the peace and dignity of the United States.

REESE BLIZZARD,
U. S. District Attorney.

(Indorsed:) 3491. In the Circuit Court of the United States for the Northern District of West Virginia. United States of America vs. Baltimore & Ohio Railroad Company, its president, managers, and company. Violation of act of Congress of March 3, 1899. A true bill. Geo. W. Johnson, foreman. Filed June 10, 1909. S. R. Harrison, clerk.

And at another day, to wit: On the 18th day of June, 1909, the following order was made and entered of record, to wit:

Order awarding process.

THE UNITED STATES *v.* THE BALTIMORE & OHIO RAILROAD COMPANY, its president, managers, and company.	Upon an indictment for violation of act of March 3, 1899. No. 3491.

On motion of the district attorney of the United States, and
8 for reasons appearing to the court, it is ordered that a writ of summons do issue against the defendant in this cause, directed to the marshal of the District of Maryland, and returnable here before this court at the next term thereof; and that, at the time of issuing such summons, the clerk of this court shall also issue a subpœna, together with the necessary copies thereof, for service upon the witnesses on behalf of the United States whose names appear upon the indictment or docket in said cause.

Summons.

UNITED STATES OF AMERICA,
Northern District of West Virginia, ss:

The President of the United States of America to the marshal of the Northern District of West Virginia, greeting:

You are hereby commanded to summon the Baltimore & Ohio Railroad Company, its president, managers, and company, if they be found within your district, to be and appear before the judges of our Circuit Court of the United States for the Northern District of West

Virginia, at the court house, in the city of Parkersburg, on the 11th day of January next, to answer us of a certain charge of violation of act of March 3rd, 1899, whereof they stand indicted.

And have you then and there this writ.

Witness, the Honorable Melville W. Fuller, Chief Justice of the United States, this 20th day of October, A. D. 1909, and in the 134th year of the independence of the United States of America.

Attest:

[SEAL.] S. R. HARRISON, *Clerk*,
C. C. U. S., N. D. W. Va.

9 (Return endorsed:) Circuit Court of the United States, Northern District of West Va. U. S. marshal' return. Received this writ at Parkersburg, W. Va., November 15, 1909. Executed the same at Parkersburg, W. Va., November 26, 1909, upon the Baltimore & Ohio Railroad Company by delivering a duly certified copy thereof to F. A. Carpenter, its agent at Parkersburg, Wood County, West Virginia, in person. No president, vice president, secretary, or other chief officer of said corporation found in my district. C. D. Elliott, United States marshal N. D. W. Va. By Hal M. Rapp, office deputy. ($2.00.)

And at another day, to wit: On the 20th day of January, 1910, the following order was made and entered of record, to wit:

Order of continuance.

THE UNITED STATES *v.* BALTIMORE & OHIO RAILROAD COMPANY, its president, managers, and company.	Upon an indictment for violation of act of March 3, 1899. No. 3491.

On motion of the district attorney of the United States, and for reasons appearing to the court, it is ordered that this cause be continued until the next term of this court.

And at another day, to-wit: On the 14th day of June, 1910, the following order was made and entered of record, to wit:

Order requiring amendment, overruling motion to quash, and demurrer.

UNITED STATES OF AMERICA, *v.* THE BALTIMORE & OHIO RAILROAD COMPANY.	Upon an indictment for violation of the act of March 3rd, 1899. No. 3491.

10 This day came as well the United States by the district attorney and the defendant The Baltimore & Ohio Railroad Company, by Van Winkle and Ambler, its counsel.

And thereupon the defendant moved the court to quash the said indictment, and it also demurred to the said indictment on the grounds:

1. That no person is named in the said indictment as charged with the offense therein set forth.

2. That there is no such person as the company of the Baltimore & Ohio Railroad Company.

3. That the indictment does not show or state facts constituting a crime or offense against the laws of the United States, and the matters arising upon the said motion and demurrer were argued by counsel. It is therefore considered by the court that the district attorney has leave to amend the said indictment, by inserting therein the true and proper name of the Baltimore & Ohio Railroad Company, a corporation, in lieu and instead of "the president, managers & company of the Baltimore & Ohio Railroad Company," and as thus amended the said indictment shall stand, and to the judgment and opinion of the court in permitting such amendment to be made, the defendant, by counsel, excepted and prayed that said exception be saved on the record, which is accordingly done.

And thereupon the court overruled the defendant's motion to quash the said indictment, and the defendant's demurrer to the said indictment, and to the judgment and opinion of the court in overruling said motion to quash, and in overruling the said demurrer the defendant, by counsel, objects and excepts and prays that its said exception may be saved on the record, and the same is accordingly done, and the court now gives the defendant leave to plead, and the defendant for plea says that it is not guilty in any manner as in the indictment set forth, and to this it puts itself upon the country,

11 and the United States do the like, and thereupon issue is joined.

And at another day, to-wit, on the 16th day of June, 1910, the following order was made and entered of record, to wit:

Order of trial, etc.

THE UNITED STATES *v.* THE BALTIMORE & OHIO RAILROAD Company, a corporation.	Upon an indictment for violation of act of March 3, 1899. No. 3491.

This day came again as well the district attorney of the United States as the defendant, the Baltimore & Ohio Railroad Company, a corporation, by B. M. Ambler, Esq., its attorney; thereupon, on motion of said defendant, John T. Harris was duly sworn as stenographer, to make report in shorthand and transcribe into longhand or typewriting, if required, the testimony adduced upon the trial of this cause; thereupon came a jury, to-wit: John C. Hall, Frank J. Rife, Asbury S. Britton, Noah C. Lance, Chas. A. Adams, Matthew Ward, Samuel P. Echols, Lee H. Logan, Edward A. Taylor, Rufus

Hawkins, James A. Fitzsimmons, and I. S. McPherson, twelve good and lawful men, selected, tried, and sworn, as the law directs, to well and truly try the issue joined in this cause and a true verdict render according to the law and the evidence, who, having heard the evidence, thereupon the defendant moved the court to direct a verdict of not guilty, which motion, being argued by counsel and considered by the court, is sustained, and the court thereupon instructed the jury to return a verdict of not guilty, which it did, as follows: "We, the jury, find the defendant not guilty as charged in the within indictment. John C. Hall, foreman." To which action of the court in sustaining said motion and in directing a verdict of not guilty the United States attorney excepted. It is therefore considered by the court that the said defendant, the Baltimore & Ohio Railroad Company, be discharged from further prosecution upon the
12 indictment aforesaid, and go thereof without day.

And at another day, to-wit, on the 20th day of June, 1910, the following order was made and entered of record, to wit:

THE UNITED STATES *v.* THE BALTIMORE & OHIO RAILROAD Company.	Upon an indictment for violation of act of March 3, 1899, No. 3491.

This day came again as well the district attorney of the United States as the defendant, the Baltimore & Ohio Railroad Company, by its attorney; and the district attorney having excepted to various rulings by the court upon the trial of this case and to the ruling of the court in sustaining the motion of the defendant *of the defendant* to direct a verdict of not guilty, this day presented his bill of exception, which is signed, sealed, and saved to the United States and made a part of the record in this proceeding.

Bill of exceptions.

(Filed June 20, 1910.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES OF AMERICA *vs.* THE BALTIMORE & OHIO RAILROAD Company.	Upon indictment #3491. Bill of exceptions.

Be it remembered that on trial of this cause in this court, at the June term, 1910, thereof, the Hon. Alston G. Dayton, judge, presiding, the following proceedings were had, to wit: A jury was impaneled and sworn according to law, and thereupon the plaintiff,

to sustain the issue upon its part, offered as its evidence in chief and rested its case on an agreed statement of fact, which statement of fact is as follows:

13 In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES OF AMERICA, *vs.* THE BALTIMORE & OHIO RAILROAD Company.	Upon an indictment for maintaining bridge across the Ohio River at Parkersburg.

In order to avoid the labor and expense of examining witnesses and procuring certification to numerous documents, the respective counsel, Mr. H. Roy Waugh, district attorney of the United States, and Messrs. Van Winkle and Ambler, attorneys and counsel for the defendant, The Baltimore & Ohio Railroad Company, hereby agree and stipulate that the following facts shall (for the purposes of the matters arising on this indictment) be taken as proved or admitted to be true.

1. The Baltimore & Ohio Railroad Company is a railroad corporation under the laws of the State of Maryland, and since the year 1871, continuously thenceforth including the present time, has owned, controlled, and operated the certain bridge in the indictment designated and referred to, across the Ohio River; and said river is one of the navigable waters of the United States.

2. That the Secretary of War, pursuant to the provisions of the act of Congress of the United States of March 3, 1899, gave notice to the defendant and its proper officers of a hearing to be had in October, 1906, relative to a proposed alteration of said bridge; and the said defendant appeared and offered no evidence on the question of obstruction, but relied on its legal rights, before Major Wm. T. Russell, lieut. colonel, Corps, U. S. A., as in the indictment alleged; and the said defendant had a reasonable opportunity to be heard with regard to said proposed change and alteration in its said bridge

3. That a report of said hearing was duly forwarded to the

14 Secretary of War by the Chief of Engineers of the United States Army; and thereafter a notice was given, dated, "War Department, Washington City, November 7, 1906," addressed to the defendant, signed by "Robert Shaw Oliver, Acting Secretary of War," as in the indictment shown in words and figures following, to wit:

To the Baltimore & Ohio Railroad Company:

Take notice that whereas the Secretary of War has good reason to believe that the bridge of the Parkersburg Branch Railroad Company, operated by the Baltimore & Ohio Railroad Company, across the Ohio River, at Parkersburg, West Virginia, is an unreasonable obstruction to the free navigation of the said Ohio River (which is

one of the navigable waterways of the United States) on account of insufficient length of channel spans;

And whereas the following alterations, which have been recommended by the Chief of Engineers, are required to render navigation under it reasonably free, easy, and unobstructed, to wit, the removal of Pier No. 38, and the conversion of spans Nos. 38 and 39 into one channel span;

And whereas to December 1, 1908, is a reasonable time in which to alter the said bridge as described above;

Now, therefore, in obedience to, and by virtue of, section eighteen of an act of the Congress of the United States entitled "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," approved March 3, 1899, I, Robert Shaw Oliver, Acting Secretary of War, do hereby notify the said Baltimore & Ohio Railroad Company to alter the said bridge as described above, and prescribe that said alteration shall be made and completed on or before December 1, 1908.

ROBERT SHAW OLIVER,
Acting Secretary of War.

15 4. That the changes to said bridge set forth in said notice had, prior to the issuance of said notice, been recommended to the Secretary of War by the Chief of Engineers of the United States Army.

5. That said notice was duly served upon the defendant on November 12, 1906.

6. That the time prescribed in said notice in which to make such changes, to wit, by December 1st, 1908, was ample and reasonable; and that the defendant has not made any of the changes required by said notice, and has not complied with the said notice; and the defendant has maintained continuously, and still maintains, said bridge across said river, and did maintain same for and during the month of December, 1908, and thenceforth up to the present time.

7. The said bridge was built and constructed by the defendant under and pursuant to the act of July 4th, 1862, entitled "An act to establish certain post roads," 12 Statutes at Large, 569, chapter 167; and said bridge was completed in January, 1871, and has been continuously since that date, in 1871, maintained and operated for the passage of through trains over the lines of railroad forming a part of the Baltimore & Ohio Railroad system and for the carrying of persons and freight and the mails of the United States in such trains.

8. The said bridge, when completed in 1871, was erected under the provisions of and full compliance with the requirements of the said act of Congress of July 14, 1862, and was then and there a lawful structure in the meaning and contemplation of said act. This bridge was made with unbroken and continuous span not less in elevation than ninety feet above low water mark over the channel of said river, and not less than forty feet above extreme high water, measured from

said elevation to the bottom chord of the bridge, with the span of said bridge covering the main channel of the river, 326½ feet in length in the clear, and also the next adjoining span 326½ feet
16 in the clear, and the piers of said bridge are parallel with the current of the river as near as practicable.

9. The said defendant, in the location and construction of said bridge, conformed to and complied with the conditions and requirements of the said act of Congress of July 14, 1862, in all things, and has since the year 1871 maintained the said bridge in conformity to the said act as originally constructed, and has maintained and operated the same as a post road and post route for the transmission of mails, troops, and munitions of war of the United States as the charges and in the manner prescribed by the said act.

10. That under the act of Congress approved July 11, 1870, chapter 240, sec. 5, 16 Statutes at Large, 227, the Secretary of War detailed three engineers to examine all the bridges erected or being erected across the Ohio River, and to report whether any of such bridges did or would interfere with free and safe navigation; and if they did or would interfere, to report to what extent of space and elevation above water would be required to prevent obstruction, etc.; and the three engineers so appointed—Gen. G. K. Warren, Gen. G. Weitzel, and Colonel William E. Merrill—under said act and in obedience to proper orders on that behalf, examined among others the bridge in the indictment mentioned, and they did make their report to the Secretary of War, who transmitted the same to the Senate of the United States May 17, 1871, and the said report and letter of the Secretary of War transmitting the same were printed as "Senate Executive Document No. 1 of the Forty-second Congress, special session;" and the conclusion of said Board of Engineers, stated in the said report, with regard to the said bridge in the indictment mentioned was, among other things, as follows:

"The board have no changes to recommend in this bridge, which, like the one at Bellaire, has been admirably built with the most liberal care for the interests of navigation," and all of said report
17 is put in evidence.

11. That the bridge in the indictment mentioned is the same bridge and structure mentioned and described and against the maintenance of which the United States prayed and sought an injunction in the certain suit in equity brought in this honorable Circuit Court on the 29th day of October, 1904, wherein the United States was plaintiff and the Parkersburg Branch Railroad Co. and the Baltimore & Ohio Railroad Co. et al. were defendants; in which suit, by an order entered on the 27th day of February, 1905, the said Circuit Court did refuse and disallow the plaintiff's motion for an injunction, and from that decree or order an appeal was taken by the United States to the United States Circuit Court of Appeals for the Fourth Circuit, where the matters arising on the record were duly heard and considered in the said Court of Appeals, cause No. 601, and the decree and judgment in the original cause was by the decision, decree,

and mandate of said Circuit Court of Appeals, on the 6th day of February, 1906, affirmed; and the same is reported under the title of the United States vs. Parkersburg Branch Railroad Co. et al. (143 Fed., 224; 74 C. C. A., 354). This defendant, the Baltimore & Ohio Railroad Co., and the bridge mentioned in the indictment are the same and identical with the defendant and the bridge in said equity cause mentioned and referred to.

12. The record in said cause No. 601 of the United States vs. Parkersburg Branch Railroad Co. and the Baltimore & Ohio Railroad Co. et al., as printed in the said Circuit Court of Appeals, and all parts of that record, may be treated as properly certified, and all certification of the said record or any documents or writing therein mentioned are hereby waived, but when any such record or paper is offered either party may object on any ground except lack of authentication or certification.

13. About the year 1904 the defendant commenced and completed a steel superstructure of much greater weight and strength
18 than that which had been used in the original construction of the bridge. This was done because the original superstructure needed repairs and renewal, and because a much more substantial and stronger superstructure was needed to meet and provide for the increased tonnage and increased weight and strain of more modern cars and engines. That work was completed before the indictment herein was found. The entire work was completed while the bridge was still in use and in continuous operation. In making such renewals and in erecting such superstructure the defendant at no time made any change whatever in the piers of the bridge, and in no manner and to no extent lowered the height of the channel spans, and made no other change from the original elevation of the lower chord or to the space left free for passage way in and upon the river than was provided at the time of the original erection of the bridge in the year 1871.

14. At no time prior to the year 1906, nor since that date, nor at any other time, has this defendant maintained or had any part of its bridge across the Ohio River, and mentioned in the indictment, having a chord lower than the original structure completed in 1871, and at no time have the piers of said bridge been changed; and navigation under said bridge has continuously since 1871 been and is as free, easy, and unobstructed as when said bridge was completed and became a legal structure in 1871.

15. No pier in connection with said bridge has been placed in the river or maintained there by the defendant other than the original piers which were erected, and have been continued in use since the original construction of the bridge in the year 1871. The pier referred to in the notice of the Secretary of War as No. 38 and the spans Nos. 38 and 39 are the same identical pier and spans originally constructed in 1871 and continuously maintained from that time until the present, with the single exception that without lowering the chords of the bridge or lessening the free space under the

19 bridge, or changing the length of any span, new material has been incorporated in the superstructure.

16. Since the said bridge was completed in 1871 the Congress of the United States has passed [redacted] act providing any compensation to be paid to the defendant or any expenses to be reimbursed to the defendant for the making of any changes or alterations in said bridge, according to the notice given by the Secretary of War and in the indictment set forth.

17. The necessary cost and expense of altering the said bridge in the manner specified in the notice of Robert Shaw Oliver, Acting Secretary of War, to-wit, the removal of Pier No. 38 and the conversion of spans Nos. 38 and 39 into one channel span, would exceed five hundred thousand dollars, and would entail great loss and inconvenience to the defendant in the conduct of its business.

18. For the purposes of trying the matters in issue on this indictment and for the purposes of this case, it is stipulated and agreed that each and every one of the facts hereinabove set forth are absolutely true; but this agreement is without prejudice to the right of either party to introduce other evidence or testimony on the trial as to any matter not covered by this agreement, and each party reserves the right to make any proper objection or exception to any evidence or testimony that may be offered on the trial outside and in addition to this present agreement.

Signed and dated at Parkersburg, West Virginia, this 16th day of June, 1910.

THE UNITED STATES OF AMERICA,
By H. ROY WAUGH, *District Attorney.*
THE BALTIMORE & OHIO RAILROAD COMPANY,
By B. M. AMBLER, *Of Counsel for Defendant.*

20 And the defendant, the Baltimore & Ohio Railroad Company, to sustain the issue on its part, offered in evidence and read to the jury the report of G. K. Warren, major of Engineers and brevet major general; G. Weitzel, major of Engineers and brevet major general; and William E. Merrill, major of Engineers and brevet colonel, dated War Department, May 16, 1871, being "Senate Executive Document No. 1 of the Forty-second Congress, special session," and contained in the record of the case of the United States against the Parkersburg Branch Railroad Company and the Baltimore & Ohio Railroad Company, and others, as shown by the printed record in the United States Circuit Court of Appeals, Fourth Circuit, case No. 601, at page 24.

Defendant also offered as evidence the transcript of the record in the equity case of The United States vs. The Parkersburg Branch Railroad Company, The Baltimore & Ohio Railroad Co., and others, which case is No. 601 in the United States Circuit Court of Appeals, Fourth Circuit, filed as Exhibit A with plaintiff's bill of exceptions; and to the offering of which record and to the putting of the same in

evidence before the jury, the Government, by the United States district attorney, objected, on the ground that the record in this case in a civil proceeding can not be introduced in the present hearing, which is a criminal proceeding, and is not material to the issue involved herein; which objection of counsel for Government was overruled by the court, to which ruling of the court the United States district attorney then and there excepted.

And further the defendant offered in evidence in the case the mandate of the United States Circuit Court of Appeals, Fourth Circuit, in Case No. 601, in said court, to-wit, the case of The United States vs. The Parkersburg Branch Railroad Company and others, filed as Exhibit B with plaintiff's bill of exceptions, and to the introduction of this mandate as evidence in the case, counsel for the Government objected on the ground that the same is not mate-
21 rial to this issue, and is not binding in this criminal prosecution, which objection of counsel for the Government was by the court overruled, to which ruling of the court counsel for the Government then and there excepted. But no objection or exception was taken to any record above mentioned on account or on the ground of want of due certification or authentication.

This was all the evidence in the case. Thereupon counsel for the defendant moved the court to direct a verdict for the defendant, which motion was resisted by counsel for the Government.

The court thereupon charged the jury as follows:

"I direct a verdict for the defendant in this case for these reasons:

"First. Because the evidence is undisputed that heretofore in the Circuit Court for this District the United States filed its bill in equity against the defendant, praying for the abatement and removal of the bridge in question and an injunction against its rebuilding and repair as then and now located. To this bill defense was made and decree entered in favor of defendant, determining that defendant was entitled to maintain such bridge under and by virtue of the act of Congress of 1862 and the subsequent approval of its construction by the Government agents and engineers regardless of the subsequent acts upon which this indictment is based, and that the Government could only cause its removal after condemnation and compensation. From this decree appeal was taken by the United States to the Circuit Court of Appeals for this circuit, and the adjudication and defense of the lower court was in all respects affirmed. No appeal or certiorari was taken to this adjudication by the Circuit Court of Appeals, and it has, in my judgment, become final and binding upon the parties. By it the legal and vested right to maintain this bridge in its present condition has been judicially determined by courts of competent jurisdiction. No matter how erroneous the decisions
22 of these courts may have been, as disclosed by subsequent decisions of the Supreme Court in other cases involving like principles and facts, nevertheless such decision stands unreversed in this case and must therefore remain the law of it, and as to this particular bridge and at least as between the same parties to be upheld

and enforced. Therefore if by it the defendant has a legal right to maintain this bridge in its present condition it cannot be prosecuted for doing it. The case, it seems to me, to be peculiarly one coming under the exception implied by Justice Harlan in the case of the Union Bridge Co. v. United States (204 U. S., 364), when he says, at page 400, 'there are no circumstances connected with the original construction of the bridge, or with its maintenance since, which so tie the hands of the Government that it cannot exert its full power to protect the freedom of navigation against obstructions.' Here the Government has completely tied its hands by invoking a court of equity to exercise its plenary power to adjust its rights in the premises, and by that court's decree standing, as it does, unreversed and in full force.

"Second. In addition to this I distinguish this case from the Union Bridge case, supra, and from the Monongahela Bridge Co. v. United States, decided February 21, 1910, and not yet reported, in this: In both of these cases the bridges in controversy were erected under and by virtue of Pennsylvania charters granted under laws of that State, which expressly provided that 'the erection of said bridge shall not obstruct the navigation of said river so as to endanger the passage of rafts, steamboats, or other water craft.' The bridge in this case was erected under and by virtue of an act of Congress in the exercise of its supreme right to regulate such erections across navigable streams, and its erection, as made, was fully and without qualification approved by the Government agents and engineers as complying in all respects with the act of Congress authorizing its erection. The
23 right of Congress by subsequent act to enforce other and different conditions calculated to destroy the vested right of the defendant in the premises without compensation does not, in my judgment, exist.

"Third. I distinguish the two cases referred to from this one in a still further particular. While Congress has control over the navigable streams and may regulate the manner in which bridges may be built across the same, it has the same right to control interstate commerce and the means by which the same is conducted. The two bridges in the cases referred to were erected under State law solely for the conduct of interstate traffic and commerce. Their abatement in no way effected commerce between the States. In this case the bridge is a railroad one, built and maintained by an interstate commerce carrier for the purpose, by reason of its railroad line, of connecting the States of West Virginia and Ohio and therefore effecting commerce between these States. The power to thus regulate commerce between the States by Congress is equal to its power to regulate navigation of navigable waters. Neither power is either superior to or greater than the other. Having therefore regulated the erection of this bridge by this interstate commerce carrier for the purposes of interstate commerce, it seems to me it will not be permitted to abate and destroy this means of interstate commerce in the exercise of its right to regulate navigation. I say 'to abate and

destroy,' because the right is not yet vested in Congress to do more than this. It can not compel the defendant to rebuild its bridge in accord with its wishes and that of the rivermen, but can only in any event require it to break and destroy its interstate connection and thereby cease its interstate commerce carrying in this particular."

To the direction by the court to the jury to find a verdict for the defendant, and to the reasons given by the court for such direction, the United States, by its attorney, excepted.

Thereupon the jury found a verdict for the defendant in
24 words and figures as follows:

"We, the jury, find the defendant not guilty as charged in the within indictment.

"JOHN C. HALL, *Foreman.*"

And the United States, by its attorney, thereupon moved the court to set said verdict aside as being contrary to the law and the evidence, and because the court erred in directing such a verdict to be rendered, and erred in the statement of the law in the opinion rendered by it in granting said motion to direct a verdict, which motion to set aside the verdict of the jury and grant a new trial was, after due consideration by the court, overruled by the court on the 20th day of June, 1910, to which ruling of the court the United States, by its attorney, then and there excepted.

And now in furtherance of justice and that right may be done the plaintiff, the United States of America tenders and presents the foregoing as its bill of exceptions in this cause to the action of the court, at the same term trial was had, and prays that the same may be settled and allowed and signed and sealed and made a part of the record, which bill of exceptions is signed in open court, sealed, and made a part of the record in this case.

This the 20th day of June, 1910.

[SEAL.] ALSTON G. DAYTON,
Trial Judge.

25 EXHIBIT A.

(With bill of exceptions.)

Transcript of record. United States Circuit Court of Appeals, Fourth Circuit. No. 601. The United States, appellant, versus Parkersburg Branch Railroad Company, John W. Davis, receiver, and Baltimore and Ohio Railroad Company, appellees. Appeal from the Circuit Court of the United States for the Northern District of West Virginia, at Parkersburg.

Transcript of record.

Be it remembered that heretofore, to wit: At a Circuit Court of the United States for the Northern District of West Virginia, continued and held at Parkersburg, in said district, on the 29th day of

October, 1904, the following order was made and entered of record, to wit:

Decree filing bill of complaint.

THE UNITED STATES
vs. In Equity.
THE PARKERSBURG BRANCH RAILROAD CO. ET AL.

On the 27th day of October, 1904, the United States presented, by Reese Blizzard, Esq., its district attorney, a bill against the Parkersburg Branch Railroad Co., a corporation organized and doing business under the laws of the State of West Virginia, et al., and the court having read and inspected the same, orders that it be filed, and the motion for a preliminary restraining order asked for in said bill is held under advisement until 10 days' notice can be given to
26 the defendants in this case of the time and place of the hearing of this application, the court reserving the right to fix another date after the expiration of the ten days for the hearing.

Bill of complaint.

(Filed October 29, 1904.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES
vs.
THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation organized and doing business under the laws of the State of West Virginia, John W. Davis, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland. | Bill of complaint.

To the honorable the judges of the Circuit Court of the United States for the Northern District of West Virginia:

Now comes Reese Blizzard, United States attorney for the Northern District of West Virginia, by direction of W. H. Moody, Attorney General of the United States, and exhibits this the bill in equity of the United States against the Parkersburg Branch Railroad Company, a corporation organized and doing business under the laws of the State of West Virginia, John W. Davis, receiver, and the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland. And thereupon your orator complains and says:

1. The Parkersburg Branch Railroad Company is a corporation organized and doing business under the laws of the State of West

Virginia, owning and operating, through its receiver, a line of
27 railroad from the city of Grafton westward through the city of Parkersburg, West Virginia, to the town of Belpre, in the State of Ohio.

2. The management and control of the property and business of the Parkersburg Branch Railroad Company was, by order of the Circuit Court of the United States for the Northern District of West Virginia, on the day of , 1903, placed in the hands of John W. Davis, as receiver for such company, and the said railroad line from Grafton, West Virginia, to Belpre, Ohio, with its branches, leased lines, and appurtenances, are now being operated by the said receiver, under some kind of supervision by the Baltimore & Ohio Railroad Company, which last-named company is a corporation organized under the laws of the State of Maryland.

Your orator is informed and believes that there is an arrangement, understanding, or contract, the nature, terms, and extent of which are unknown to your orator, by which the Baltimore & Ohio Railroad Company, a corporation, has some kind of management or control of the Parkersburg Branch Railroad Company, and is interested therein, and is one of the owners and may be the sole owner of the bridge hereinafter mentioned.

4. On July 14, 1862, Congress passed an act entitled "An act to establish certain post roads" (12 Stats., 569), which contains, among other things, general provisions regulating the building of bridges by railroad companies across the Ohio River above the mouth of the Big Sandy River. This act, in its fourth section, provided that the span of any bridge erected under its authority over the Ohio River above the mouth of the Big Sandy River, covering the main channel of the river, should not be less than 300 feet in length, with also one of the next adjoining spans of not less than 220 feet in length.

5. The Ohio River, from Pittsburg, Pennsylvania, to its junction with the Mississippi River, was and is a navigable river of the United States throughout its entire length, for both freight and passenger traffic. The main article of commerce shipped from Pittsburg and points above Bellaire is coal, which is towed by stern-wheel steamboats in wide fleets of flatboats fastened together in front of
28 steamboats. At the time of the passage of the act of July 14, 1862, it was deemed that a main channel span of 300 feet in length, with an adjoining span of 220 feet in length would afford a sufficient waterway for these coal fleets.

6. About the year 1870 and 1871 the defendant, the Parkersburg Branch Railroad Company and the Baltimore & Ohio Railroad Company, or some other person, firm, or corporation, acting for them, as your orator is informed and believes, acting under the authority conferred by the act of July 14, 1862, built a bridge over the Ohio River from the city of Parkersburg, West Virginia, to the town of Belpre, State of Ohio, over which the defendant, the Parkersburg Branch Railroad Company, has since operated and is now operating its trains. This bridge was constructed in accordance with the provisions of the

act of July 14, 1862, with a main channel span of 349 feet in the clear, and an adjoining span of 349 feet in width. Whether the defendant, the Parkersburg Branch Railroad Company, built the said bridge or caused the same to be built or not, your orator, on information and belief, alleges that said railroad company is now the owner of the same, and has charge and control thereof, and is now operating its trains over said bridge.

7. On December 18, 1872, Congress passed an act entitled "An act to authorize the construction of bridges across the Ohio River, and to prescribe the dimensions of the same" (17 Stats., 398), which superseded the law of July 14, 1862, and contained the following reservations of the right of Congress to require obstructions to the Ohio River by the construction of bridges to be removed whenever deemed necessary:

"SEC. 7. That the right to alter or amend this act, so as to prevent or remove all material obstructions to the navigation of said river by the future construction of bridges, is hereby expressly reserved without any liability of the Government for damages on account of the alteration or amendment of this act, or on account of the prevention or requiring the removal of any such obstructions; and if
29 any change be made in the plan of construction of any bridge constructed under this act, during the progress of the work thereon, or before the completion of such bridge, such change shall be subject to the approval of the Secretary of War, and any change in the construction, or any alteration of any such bridge that may be directed at any time by Congress, shall be made at the cost and expense of the owners thereof."

8. On February 14, 1883, an act of Congress was approved (22 Stats., 414), which amended the act of December 17, 1872, authorizing the construction of certain bridges across the Ohio River, and provided among other things:

"SEC. 2. That every bridge hereafter erected across the Ohio River shall have its axis at right angles to the current at all stages, and all of its spans shall be through spans. Every such bridge shall have at least one channel span placed over that part of the river usually run by descending coal fleets, said channel span to give a clear water way between the piers of five hundred feet, measured on the low water line. Said channel span shall be at least forty feet above local highest water, measured to the lowest part of the span, and shall be at least ninety feet above low water in bridges built above the mouth of the Big Sandy." * * *

"SEC. 4. That any person, company, or corporation authorized to construct a bridge across the Ohio River shall give notice, by publication for one week in newspapers having a wide circulation, in not less than two newspapers in the cities of Pittsburg, Cincinnati, and Louisville, for bridges above the mouth of the Big Sandy, and in the cities of Pittsburg, Cincinnati, Louisville, St. Louis, Memphis, and New Orleans, for bridges below the mouth of the Big Sandy, and shall submit to the Secretary of War, for his examination, a design and

drawings of the bridge and piers and a map of the location giving, for the space of at least one mile above and one mile below the proposed location, the topography of the banks of the river and the shore lines at high and low water.

30 "This map shall be accompanied by others, drawn on the scale of one inch to two hundred feet, giving for a space of one-half a mile above the line of the proposed bridge and a quarter of a mile below an accurate representation of the bottom of the river, by contour lines two feet apart, determined by accurate soundings, and also showing over the whole width of this part of the river the force and direction of the current at low water, at high water, and at least one intermediate stage, by triangulated observations on suitable floats. The maps shall also show the location of other bridges in the vicinity, and shall give such other information as the Secretary of War may require for a full and satisfactory understanding of the subject. Said maps and drawings shall be referred to a board of engineers for examination and report, which board shall personally examine the site of the proposed bridge and shall hold a public session at some convenient point to hear all objections thereto, of which public session due notice and invitation to be present shall be given all interested parties; and if said board of engineers reports that the site is unfavorable, the Secretary of War shall be authorized, on the recommendation of said board, to order such changes in the bridge or its piers, or such guiding dikes or other auxiliary works as may be necessary, at the expense of the proprietors or managers of such bridge or piers and other works, for the security of navigation; and the proposed bridge shall only be a legal structure when built as approved by the Secretary of War."

This act expressly reserved the right to alter, amend, or repeal which was reserved in section 7 of the act of December 17, 1872.

9. The requirement of the act of February 14, 1883, that every bridge thereafter built across the Ohio River should have a channel span giving a clear waterway between the piers of 500 feet in width measured on the low-water line was made for the necessary accommodation of the rapidly increasing commerce of the river, particularly in the shipment of coal by coal fleets from Pittsburg. The demand for cheap fuel and cheap transportation rates by the large in-

31 dustrial interests of the Ohio and Mississippi Valleys, and by the cotton and sugar interests of the South, reached by the great waterway of which the Ohio River is a part, had made it necessary by that time for shippers of coal and coke from Pittsburg to increase the size of their tows, and this necessitated a broader waterway and wider span in order to prevent the breaking of the tows or collision with the bridge piers.

10. On September 19, 1890, in order further to provide for the protection and imprisonment of the national water ways, Congress passed an act conferring additional powers upon the Secretary of War with respect to the control and regulation of the navigable waters of the United States (26 Stats., 426). Section 4 of this act conferred upon

the Secretary of War authority, whenever he has good reason to believe that any bridge constructed over any of the navigable waters of the United States is an unreasonable obstruction to the free navigation of such waters, to require the persons owning or controlling such bridge so to alter the same as to render navigation through or under it reasonably free, easy, or unobstructed, in accordance with such specifications of changes as the Secretary may determine. Section 7 made it unlawful to commence the construction of any bridge over any navigable waters of the United States under State authority until the location and plan of the bridge should be submitted to and approved by the Secretary of War.

11. On March 3, 1899, an act of Congress was approved which provided, among other things (Stats. ——):

"SEC. 9. That it shall not be lawful to construct or commence the construction of any bridge, dam, dike, or causeway over or in any port, roadstead, haven, harbor, canal, navigable river, or other navigable water of the United States, until the consent of Congress to the building of such structures shall have been obtained and until the plans for the same shall have been submitted to and approved by the Chief of Engineers and by the Secretary of War: Provided, That such structures may be built under authority of the legislature of a State across rivers and other waterways the navigable portions
32 of which lie wholly within the limits of a single State, provided the location and plans thereof are submitted to and approved by the Chief of Engineers and by the Secretary of War before construction is commenced: And provided further, That when plans for any bridge or other structure have been approved by the Chief of Engineers and by the Secretary of War, it shall not be lawful to deviate from such plans either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of War."

12. Under the supervisory power conferred upon the Secretary of War by the foregoing statutes the War Department in recent years has required that all bridges built over the Ohio River shall have channel spans ranging from 600 to 800 feet in length. This requirement was insisted upon in order to accommodate the enormous growth and development of commerce on that river during the last thirty years. The demand for cheaper transportation and fuel, and the enormous increase in the traffic in coal and coke from Pittsburg down the Ohio River, has resulted in the increase in the size of the tows two or three fold over what they were when the said bridge between Parkersburg and Belpre was built over said river. Your orator avers in this connection that the spans of the bridge between Parkersburg, West Virginia, and Belpre, Ohio, the main span being 349 feet and the adjacent span being 349 feet, are wholly inadequate to accommodate the present commerce of the Ohio River at that point, and that the spans of this bridge, located as they now are and have been since its completion in 1871, constitute under existing conditions, a serious

and dangerous obstruction to the navigation of the Ohio River at that point. The bridge as it now stands with its piers so located as to afford but two narrow channel spans of 349 feet each, requires tows descending the river from Pittsburg to be broken up and taken through in sections, resulting in extraordinary and unnecessary expense. Moreover, even with the greatest care, frequent collisions of boats with the piers have occurred and will occur, resulting in great loss of life and property.

33 13. Under date of September 18, 1902, the Baltimore & Ohio Railroad Company, through its chief engineer, addressed a communication to the Secretary of War, advising him that the said company desired to renew the two channel spans, Nos. 38 and 39 of the said bridge, and stating that it was necessary to do so, and requesting authority to make said renewals; and said engineer submitted with the communication the plans for the proposed new structure. This request, after the fullest consideration and investigation, was refused and was not granted.

Your orator avers that the bridge constructed by the defendant railroad companies and completed in 1871, had become wholly insufficient and inadequate, owing to the great growth of traffic over the road and the increased weight of its engines and cars, and a new bridge was necessary. The said railroad companies and the receiver of the Parkersburg Branch Railroad Company knew that if application was made for permission to construct a new bridge across the Ohio River from Parkersburg to Belpre, neither Congress nor the Secretary of War would grant such authority, except on the condition that the bridge be constructed with a channel span of not less than 398 feet, and so constructed as to leave navigation through and under the bridge reasonably free and unobstructed, in order to comply with the new law and the requirements of commerce on the Ohio River in constructing a new bridge over the Ohio River; and the defendant railroad companies and the receiver of the Parkersburg Branch Railroad Company conceived the plan of building said bridge under the guise of renewing their old bridge, thinking in this way to escape the additional expense of constructing such bridge as the commerce of the Ohio River, as well as the railroad traffic, required.

Your orator avers that the proposed bridge which the defendant railroad companies and the receiver of the Parkersburg Branch Railroad Company is about to construct is in no sense a renewal or reconstruction of the bridge originally built and now being used by the company. It is entirely and a much heavier structure made necessary by the increased weight of the engines and cars of the company and the heavier traffic of the road. Such a bridge can only

34 be constructed in accordance with existing law. The authority granted by the act of July 14, 1862, even if it should be held to authorize the maintenance of the existing structure upon certain conditions, does not empower the railroad company to build a new structure. The power to erect a new structure, even though on the

site of the old structure, can only be obtained by complying with the law now governing the erection of bridges across the Ohio River as a navigable stream of the United States.

Your orator avers that through its proper officers it has informed the said railroad company that it would consent and grant authority to erect a new structure in lieu of the present bridge, on condition of removing the pier between spans 38 and 39 of the said bridge and uniting spans 38 and 39 in one span, thus making a channel span to the said bridge approximately 698 feet, which, owing to the spans not being parallel to the current of the Ohio River, the angle of obliquity would be such as to reduce the practical width of said span for navigation purposes to about 675 feet.

Your orator avers that in order to prevent said bridge from being an unreasonable obstruction to navigation, a less width of span could not be permitted.

14. Your orator alleges that the proposed bridge about to be constructed across the Ohio River, and in fact now being in process of construction, from Parkersburg to Belpre, by the defendant railroad company and its receiver, will have no wider spans than the existing structure; that the channel spans of the proposed new structure leave a wholly inadequate waterway for the present commerce of the Ohio River, which passes that point, and which has increased enormously since the construction of the original bridge; that the construction of the proposed new bridge as contemplated will create and continue a serious, dangerous, and unreasonable obstruction to the navigation of the Ohio River at this point; that neither Congress, nor the Secretary of War, nor any officer authorized to represent the United States has given consent to the erection of this pro-
35 posed new bridge as contemplated; that the construction of this proposed new bridge without the consent or approval of the United States, to which is entrusted by the Constitution the protection of this great waterway of commerce among the several States, will be in violation of law, and to the great and irreparable injury of the United States and the commercial interests entrusted to its care.

15. Your orator further alleges that in the construction of the proposed new bridge across the Ohio River from Parkersburg to Belpre, and as an aid to the same, the defendant intends to, and unless restrained will, erect between the piers which mark the main channel span a temporary trestle work, which will reduce the clear opening for navigation between such piers from about feet, as it exists at present, to about feet. The main channel span is now inadequate to accommodate the commerce which passes up and down the river at that point, and the erection of this trestle work and the reduction of the channel span as contemplated will create an additional, serious, dangerous, and unreasonable obstruction to the navigation of the Ohio River at this point. Your orator avers that neither Congress nor the Secretary of War nor any officer authorized to represent the United States in the premises has given consent to

the erection of this proposed trestle work, although the defendants have made application for such consent; that such trestle work when erected will be maintained in position for a considerable length of time, the precise period being unknown to the complainant; and your orator further avers that the construction and maintenance of the proposed trestle work as contemplated, without the consent or approval of the United States or its representatives and without any supervision on the part of the Government, either as to the manner in which it should be erected or the length of time for which it should be maintained, will be in violation of law and to the great and irreparable injury of the United States and the commercial interests connected with the navigation of the Ohio River entrusted to its care.

16. Your orator submits to the court that if the defendant
36 railroad company and its receiver have authority under the act of 1862 to renew its bridge across the Ohio River from Parkersburg to Belpre without further permission of Congress and without the approval of the Secretary of War and without complying with the existing law upon the subject, nevertheless, that the United States has the power under the circumstances to require that in the process of renewal or reconstruction such alterations shall be made as will remove the existing obstruction to navigation caused by the old bridge and leave navigation on the Ohio River at this point reasonably free, clear, and unobstructed. Congress, in the act of 1883, has given the latest expression of its views as to the needs of commerce on this river by requiring that a bridge across the Ohio River constructed after that date must have a channel span of at least 500 feet, and that the ends of commerce along the river should be subserved and the obstruction to navigation removed and prevented by requiring the defendant railroad company to leave a channel span of such length as the court may deem necessary, but not less than 500 feet, so as to provide a sufficient water way for the passage of the existing commerce of the river, even though, in the opinion of the court, the additional cost incident to such an alteration should be borne by the Government.

17. Your orator alleges that the United States holds the Ohio River and other navigable waters within its jurisdiction in trust for the public use; that said trust is perpetual and inalienable; and that there is no authority or power in the Congress or in any branch of the Federal Government to cede or grant to any individual or corporation any right to destroy, obstruct, or impede the right of the public to reasonable use of the Ohio River and other like rivers and waters as natural highways for trade and commerce. And your orator says that no private right can be acquired to the prejudice of the public right, so as to require the United States to purchase from any person, firm, or corporation the right to remove any unreasonable obstruction
37 to the navigation of the Ohio River, or to indemnify any owner of such unreasonable obstruction against loss because the same is required to be removed, or to pay the costs of such

removal. That the Congress, having no authority to authorize the construction by the Parkersburg Branch Railroad Company of any unreasonable obstruction to the navigation of the Ohio River, nor to authorize the continuance of any structure in or over said river after the same has become an unreasonable obstruction and impediment to navigation, can be deemed only to have intended the grant of a right revocable at the will of the said United States whenever, in the development of trade and commerce, such structure should have become an unreasonable obstruction to the navigation of said river. That said bridge over the Ohio River from Parkersburg to Belpre is, and that said proposed new bridge on the same piers, abutments, and masonry will be, an unreasonable obstruction to the navigation of the Ohio River.

18. Your orator alleges that when the Congress, or any officer of the United States having authority, permits the construction of a bridge over any navigable river of which the United States has jurisdiction, such permission is granted by the United States and received by the party seeking the permission for a reasonable time, having in view the necessities of commerce then existing and prospective, as well as the interests of the person, firm, or corporation seeking such permission; that when permission was given to build said bridge from Parkersburg to Belpre it was in contemplation of the United States and the said railroad company that said bridge might be maintained for a reasonable length of time until the needs of commerce or the business of said company should require a different structure; that the time has now arrived when the navigation of the said river and the business of said railroad company both require a new bridge; that the original permission granted under the act of 1862 cannot be taken to vest in said railroad company a perpetual right to build and maintain bridges on the piers which were deemed sufficient when said bridge was built; that the necessity of a new and heavier bridge for its own purpose is admitted by said railroad company; that the necessity for a larger channel span
37 for the commerce and navigation of the present and immediate future has been ascertained by the act of Congress of 1883 and the actual experience of persons navigating said river.

19. Your orator alleges that it is and has always been the policy of the United States to require of persons who desire to bridge the navigable waters of the United States no greater outlay and expenditure than is apparently reasonable and necessary at the time; that the consideration thus shown by the United States to those applying for permits to build bridges over navigable waters within its jurisdiction should not be construed into a surrender by the United States of its public trusts and of its right and duty to preserve the navigable waters within its jurisdiction as common highways for commerce, trade, and intercourse; that the permission to build said Parkersburg Bridge carried with it the implied reservation of the absolute public right, based upon the public duty, of the United States to require said bridge to be altered, changed, or removed

whenever the public right to reasonable use of the Ohio River for navigation should require it.

Your orator avers that there is no adequate remedy at law in the premises, and therefore prays that a temporary restraining order enjoining the defendants, their agents, servants, employees, workmen, contractors, and others whomsoever, from constructing or proceeding to construct the contemplated bridge or any bridge across the Ohio River from Parkersburg to Belpre, with a channel span of not less than 698 feet, and without the consent of Congress and the approval of the Secretary of War and the Chief of Engineers, until the final hearing of this cause, when your orator prays that such temporary injunction may be made perpetual; and that the existing bridge operated by the said railroad company between Parkersburg, West Virginia, and Belpre, Ohio, be declared and decreed to be an unreasonable obstruction to the navigation of the Ohio River, and that the said railroad company be required within a reasonable time to remove the same, or replace same with such a bridge as shall conform to existing law. And your orator
39 prays for such other relief as may be proper in the premises.

And may it please your honors to grant unto your orators a writ of subpœna to be issued out of and under the seal of the court, directed to the defendants named in the caption hereof, commanding them on a day certain and under a certain penalty therein to be specified to be and appear before your honorable court, then and there to answer, but not under oath (answer under oath being expressly waived), and to abide such order and decree as to your honors may seem proper.

STATE OF WEST VIRGINIA,
Wood County, to wit:

Reese Blizzard, being first duly sworn, upon his oath says that the allegations in the foregoing bill stated as of his own knowledge are true, and those otherwise stated he believes to be true.

Subscribed and sworn to before me this the day of , 1904.

Decree setting motion for November 30, 1904.

And at another day, to wit, on the 7th day of November, 1904, the following order was made and entered of record, to wit:

THE UNITED STATES *vs.* THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation organized and doing business under the laws of the State of West Virginia; JOHN W. Davis, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland.	In chancery.

Plaintiff, by Reese Blizzard, United States attorney, this day again renewed its motion for a temporary restraining order, and the

said motion being duly considered, the court is of opinion to
40 and doth refuse the same, for the reason that the court has assurances from Hugh L. Bond, general counsel for the Baltimore & Ohio Railroad Company, that the two channel spans, Nos. 38 and 39 of the bridge in question in this suit, are not to be constructed and no effort or attempt will be made to do so before the first day of December, 1904. And thereupon the United States, by its said attorney, moved the court for the permanent injunction prayed for in its bill, and the said motion is set down for hearing at the United States court room in the city of Parkersburg, on the 30th day of November, 1904, at ten o'clock a. m. And service of a duly certified copy of this order on each of the said defendants shall be sufficient notice of the hearing of the said motion.

Notice.

At a Circuit Court of the United States for the Northern District of West Virginia, continued and held at Parkersburg, in said district, on the 7th day of November, 1904, the following order was made and entered of record, to wit:

THE UNITED STATES *vs.* THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation organized and doing business under the laws of the State of West Virginia; JOHN W. Davis, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland.	In chancery.

Plaintiff, by Reese Blizzard, United States attorney, this day again renewed its motion for a temporary restraining order, and the said motion being duly considered, the court is of opinion to and doth refuse the same, for the reason that the court has assurances
41 from Hugh L. Bond, general counsel for the Baltimore & Ohio Railroad Company that the two channel spans, Nos. 38 and 39, of the bridge in question in this suit, are not to be constructed and no effort or attempt will be made to do so before the first day of December, 1904. And thereupon the United States, by its said attorney, moved the court for the permanent injunction prayed for in its bill, and the said motion is set down for hearing at the United States court room in the city of Parkersburg on the 30th day of November, 1904, at ten o'clock a. m. And service of a duly certified copy of this order on each of the said defendants shall be sufficient notice of the hearing of the said motion.

I, L. B. Dellicker, clerk of the Circuit Court of the United States for the Northern District of West Virginia, hereby certify that the foregoing is a true copy of an order entered of record in said court on the 7th day of November, 1904, in the equity cause of The United

States v. The Parkerburg Branch Railroad Co. et al., therein pending:

Given under my hand and seal of said court at Parkersburg, in said district, this 7th day of November, 1904.

[SEAL.] L. B. DELLICKER,
Clerk, C. C. U. S., N. D. W. Va.

(Return endorsed:) Received this writ at Parkersburg, W. Va., November 7, 1904. Executed same as to the Parkersburg Branch Railroad Company, a corporation, by delivering a duly certified copy thereof to W. W. Van Winkle, a director of said corporation, in person, the president or other chief officer not being found; executed as to the Baltimore and Ohio Railroad Company, a corporation, by delivering to F. A. Carpenter, agent of said corporation, a duly certified copy thereof in person, the president or other chief officer not being found, both at Parkersburg, W. Va., November 7, 1904. C. D. Elliott, marshal N. D. W. Va. Per H. M.
42 O'Bleness, O. D. M. Marshal's fees, $6.00. Reced. this writ at Clarksburg, W. Va., Nov. 12, 1904. Executed the within writ by serving a duly certified copy thereof on the within named Parkersburg Branch Railroad Company, a corporation, by delivering to John W. Davis, the receiver of the said Parkersburg Branch Railroad Company, a corporation, in person. C. D. Elliott, U. S. M. N. D. W. Va. By D. R. Jackson, U. S. deputy. I accept service of the attached order at the hands of D. R. Jackson, Dept. U. S. M. N. D. W. Va., this 14th day of November, 1904. Jno. W. Davis, receiver, Parkersburg Branch Railroad Co.

Answer of defendants.

(Filed November 30, 1904.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES
vs.
THE PARKERSBURG BRANCH RAILROAD Company et al. | In equity.

Answer of the Baltimore and Ohio Railroad Company, the Parkersburg Branch Railroad Company, and John W. Davis, receiver.

To the honorable the Judges of the Circuit Court of the United States for the Northern District of West Virginia:

These respondents, for answer to the bill of complaint of The United States in this cause against them exhibited, answering say:

1. These respondents admit that the Parkersburg Branch Railroad Company is a corporation organized and doing business under the

laws of the State of West Virginia, owning and operating through its receiver a line of railroad from the city of Grafton westward through the city of Parkersburg, West Virginia.

43 2. These respondents admit that John W. Davis has been duly appointed receiver of said railroad by order of the Circuit Court of the United States for the Northern District of West Virginia, and further show that said receiver was, by order of said court, authorized to enter into an arrangement with the Baltimore and Ohio Railroad Company for the operation of the Parkersburg Branch Railroad Company upon the terms upon which said railroad was being operated prior to his appointment, and that said receiver has made said arrangement with said respondent, and that under said arrangement said respondent is now operating the Parkersburg Branch Railroad for the account of the Parkersburg Branch Railroad Company and said receiver.

3. In the year 1869 and prior thereto the railroads of said Parkersburg Branch Railroad Company and of the Marietta and Cincinnati Railroad Company were connected by means of a ferry across the Ohio River at Parkersburg.

4. In the year 1869 the corporate respondents and the Marietta and Cincinnati Railroad Company began the construction of the bridge mentioned in the bill, and the same was completed and opened for traffic on January 7, 1871, and said bridge has since been continuously maintained and operated for the passage of through trains over the lines of railroad forming a part of the Baltimore and Ohio Railroad system.

5. As alleged in the fourth section of the bill, Congress did, on the 14th day of July, 1862, pass an act entitled "An act to establish certain post roads" (12 Stat. at Large, 569, chap. 167). The third, fourth, and fifth sections of said act are as follows:

"SEC. 3. And be it further enacted, That it shall be lawful for any other railroad company or companies, whose line or lines of road may now or shall hereafter be built to the Ohio River above the mouth of the Big Sandy River, in accordance with the terms of the charter or charters of such company or companies, to build a bridge across said river for the more perfect connection of any such roads and for the passage of trains thereof, under the limitations and conditions hereafter provided.

44 "SEC. 4. And be it further enacted, That any bridge erected under the privileges of this act may, at the option of the company or companies building the same, be built either as a drawbridge, with a pivot or other form of draw, or with unbroken and continuous spans: Provided, That if the said bridge shall be made with unbroken and continuous spans it shall not be of less elevation than ninety feet above low-water mark over the channel of the said river; nor in any case less than forty feet above extreme high water, as understood at the point of location, measuring for such elevation to the bottom chord of the bridge; nor shall the span of such bridge

covering the main channel of the river be less than three hundred feet in length, with also one of the next adjoining spans of not less than two hundred and twenty feet in length, and the piers of said bridge shall be parallel with the current of the river as near as practicable: And provided also, That if any bridge built under this act shall be constructed as a drawbridge, the same shall be constructed with a span over the main channel of the river, as understood at the time of the erection of the bridge, of not less than three hundred feet in length, and said span shall not be less than seventy feet above low-water mark, measuring to the bottom chord of the bridge, and one of the next adjoining spans shall not be less than two hundred and twenty feet in length; and also that there shall be a pivot draw constructed in every such bridge at an accessible and navigable point, with spans of not less than one hundred feet in length, on each side of the central or pivot pier of the draw: And provided also, That the said draw shall always be opened promptly upon reasonable signal for the passage of boats, whose construction may not, at the time, admit of their passing under the permanent spans of said bridge, except that said draw shall not be required to be opened when engines or trains are passing over said bridge, or when passenger trains are due, but in no case shall unnecessary delay occur in the opening of said draw after the passage of such engines or trains.

"SEC. 5. And be it further enacted, That any bridge or bridges erected under the provisions of this act shall be lawful structures and shall be recognized and known as post routes, upon which also no higher charge shall be made for the transmission over the same of the mails, the troops, and munitions of war of the United States than the rate per mile which the company or companies erecting such bridges may from time to time receive on the balance of their line or lines for such services, and that officers and crews of all vessels, boats, or rafts navigating the said Ohio River are required to regulate the use of said vessels and of any pipe or chimneys belonging thereto, so as not to interfere with the elevation, construction, or use of any of the bridges erected or legalized under the provisions of this act."

6. That in acceptance of the above-mentioned act and under authority of the same said respondents did in the years 1869, 1870, and 1871 construct and complete the bridge mentioned in the bill of complaint over the Ohio River, over which they have ever since and are now operating trains. This bridge was made with unbroken and continuous spans not less in elevation than ninety feet above low-water mark over the channel of the said river, and not less than forty feet above extreme high water, measured from such elevation to the bottom chord of the bridge, with the span of such bridge covering the main channel of the river 326½ feet in length in the clear, and also the next adjoining span 326½ feet in length in the clear, and the piers of said bridge are parallel with the current of the river as near as practicable. Said respondents in the location and construction of said bridge conformed to and complied with the conditions and requirements of said act of Congress of July 14, 1862, in every par-

ticular, have since maintained said bridge in strict conformity to the said act, as originally constructed, and have maintained and operated the same as a post road for the transmission of mails, troops, and munitions of war of the United States, at the charges and in the manner prescribed by the said act.

By the act of Congress of July 10, 1870, chap. 240, sec. 5 (16 Stats., 227), the Secretary of War was required to detail three
46 engineers to examine all the bridges erected or in process of erection across the Ohio River, and report to the next Congress whether in their opinion such bridges or any of them, as constructed or proposed to be constructed, did or would interfere with free and safe navigation, and if they did or would interfere to report what extent of space and elevation above water would be required to prevent obstruction, and an estimate of the cost of changing the bridge built and in process of building so as to conform to what was recommended. Pursuant to this act, the Secretary of War detailed G. K. Warren, major Engineers and brevet major general, U. S. Army, G. Weitzel, major of Engineers and brevet major general, and Wm. E. Merrill, major of Engineers, and brevet colonel, who in the discharge of their duties under such appointment examined, among other bridges, the said bridge at Parkersburg, and made their report on the same to the Secretary of War, who transmitted the same to the Senate May 17, 1871, and the said report and letter of the Secretary of War transmitting the same were thereupon ordered to be printed and were printed as "Senate Executive Document No. 1 of the 42nd Congress, special session." These respondents file herewith and make part hereof, marked "Respondents' Exhibit No. 1," said document.

These respondents call the special attention of the court to the conclusion of said Board of Engineers stated in the report as follows:

"The board have no changes to recommend in this bridge, which, like the one at Bellaire, has been admirably built, and with the most liberal care for the interest of navigation."

7. These respondents admit the passage by Congress of the act of December 17, 1872, mentioned in the seventh section of the bill, and the act of February 14, 1882, mentioned in the eighth section of the bill, but these respondents say that neither of said acts has any application to the said bridge constructed under authority of the act of July 14, 1862, and that neither of said acts purports to affect or can affect the rights acquired by these respondents under the said act of 1862, by the acceptance of the same and the construction, maintenance, and use of said bridge thereunder.

47 8. These respondents admit the passage by Congress, September 19, 1890, of an act entitled "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," and that the fourth section of said act contains provisions making it the duty of the Secretary of War, whenever he has good reason to believe that any railroad or other bridge now constructed or which may hereafter be

constructed over any of the navigable water ways of the United States is an unreasonable obstruction to the free navigation of such waters, to give notice to the persons or corporations owning or controlling such bridge so to alter the same as to render navigable through or under it reasonably free and unobstructed, substantially as alleged in section ten of this bill.

These respondents, however, are advised and so state that the said act of September 19, 1890, had and has no application to any bridge constructed under authority of Congress, still less to this bridge constructed under the act of Congress of July 14, 1862; that the said act of 1890, in so far as it sought to construe the same so as to authorize the Secretary of War to require the removal or alteration of any bridge constructed under any of the acts of 1862 or 1872 or 1883, in the bill of complaint mentioned, would be void as an unconstitutional attempt of Congress to delegate to the Secretary of War a power which belonged to Congress alone; and, as sought to be construed so as to authorize the Secretary of War to require the removal or alteration of a bridge constructed under the said act of 1862, is unconstitutional, null, and void for the additional reason that it is in conflict with the fifth amendment to the Constitution of the United States.

These respondents deny the fact to be, as charged in the bill, that the spans of the said bridge are inadequate to accommodate the present commerce of the Ohio River at that point; that the spans of this bridge located as they now are and have been since
48 the completion of the same in 1871, constitute, under existing conditions, a serious and dangerous obstruction to the navigation of the river at that point; and that the piers as now located require the large tows descending the river to be broken up and taken through in sections, resulting in extraordinary and unnecessary expense, and that collisions are caused by the present location of the piers. On the contrary, these respondents say that the channels for navigation afforded by said bridge as now located are amply sufficient, now as in 1871, to accommodate the commerce of the Ohio River at that point; that the dangers of navigation and accidents at this point are due to the fact that those engaged in navigating the river prefer to take the risk of loss of life and property rather than furnish towing power sufficient properly to control the tows. Navigation under this bridge is reasonably free, easy, and unobstructed, and no more obstructed or difficult than in 1871, but those navigating the river chose to adopt methods of navigation more dangerous than those practiced in 1871 and for many years thereafter.

These respondents, however, are advised and so state that inasmuch as Congress has not revoked or attempted to revoke the authority granted these respondents by the act of July 14, 1862, but the provisions of that act declaring that this bridge shall be a lawful structure and shall be recognized and known as a post-road remain in full force and effect, it is not within the province of the Secretary of War or of this court to inquire whether this bridge obstructs the navigation of the Ohio River or in what degree.

9. These respondents admit the passage by Congress of the act of March 13, 1899, mentioned and quoted in the eleventh section of the bill, but state that said act, as appears on its face, has no application to bridges theretofore constructed.

10. And, further answering, these respondents say that the said bridge was completed in 1871, and has been in constant use since that time, and in the nature of things the superstructure, which is of iron and steel, is wearing out and must be renewed; that as
49 early as the year 1898 and before the officers of said companies have contemplated and planned the renewal of the superstructure of this bridge, and, as in the case of all other bridges on the lines of railroad owned or operated by said companies, renewal of which has become necessary from time to time, the plans for the renewal of the superstructure of this bridge have provided for a steel superstructure of much greater weight and strength than that now in use. In renewing the superstructure of this bridge these respondents have not and do not now contemplate or intend to make any change whatever in the piers of the bridge, any lowering of the height of the channel spans, or any other change which in any respect or in any degree will or can possibly affect the navigation of the Ohio River at this point. While these respondents were advised that the mere renewal of the superstructure of this bridge as contemplated did not require the approval of the Secretary of War or of any engineer of the United States, and that under the acts of Congress the Secretary and engineers of the War Department could have no jurisdiction or power of regulation in the premises, yet as a matter of courtesy it was through proper that the chief engineer of said companies should communicate with the Secretary of War, telling him what it was proposed to do and giving him copies of the plans, to the end that the work might be done in accordance with any suggestions that might be made in the public interest, and with the intention on the part of said companies that any reasonable suggestions as to the method of doing the work or as to the details of the work should be adopted and complied with. These respondents deny that the communication to the Secretary of War mentioned in the thirteenth section of the bill of complaint was made for any other reason or with any other intention than those above stated, and that it was, as alleged in the bill or otherwise, a subterfuge to obtain permission to construct a new bridge; and further deny that the work contemplated and shown by the plans transmitted or the work contemplated or intended by these respondents is in any sense the construction of a new bridge, as alleged in the bill, or anything else than the renewal of the superstructure of the present bridge.

50 These respondents are advised and so state that by their acceptance of the act of Congress of July 14, 1862, and the construction, maintenance, and use of said bridge thereunder, they became vested with a franchise from the United States, which is property of which they cannot be divested without due process of law and upon just compensation; that the franchise so granted by Congress includes the right to maintain the bridge so built, not

only during the life of the first superstructure thereof, but by the renewal of the superstructure from time to time as may be required for the maintenance of the bridge as a post route for the transportation of mails, troops, and munitions of war of the United States, and the traffic of these respondents as railroad carriers perpetually, and that the franchise so granted is to-day in full force and effect, without even an attempt on the part of Congress to change, modify, or revoke the same.

11. Further answering, these respondents say that they do not intend to and will not erect any temporary trestle work under the two channel spans, as alleged in the fifteenth paragraph of said bill; that said two spans will be built without placing any trestle work whatever between the piers and without obstruction the navigation of the river in any way.

12. In answer to the matters contained in the seventeenth, eighteenth, and nineteenth sections of the bill of complaint herein, these respondents deny each and every allegation of fact therein made, and these respondents are advised and so state that each and every proposition of law therein stated is unsound and without any foundation in authority, but, on the contrary, is directly opposed to every decision of the Supreme Court of the United States bearing on the subject.

13. These respondents submit that under no aspect of the case is the complaint entitled to a temporary restraining order, as prayed in said bill; that a contract has been made for the construction of said spans and the material for said construction has been assembled and said work is now in progress, and any temporary restrain-
51 ing order would put these respondents to great loss by stopping said work and by delaying the renewal of said bridge, which is necessary to enable them to operate said lines of railroad; that if these respondents have no right to renew said spans of said bridge, then said bridge when completed with be an unlawful structure and these respondents can be required to remove the same; that the complainant will suffer no damage by reason of the continuance of said work until completion, and on the contrary these respondents will suffer great loss, which cannot be definitely ascertained, and for which adequate compensation cannot be made.

And having fully answered, these respondents pray to be hence dismissed with their costs in this behalf wrongfully incurred.

HUGH L. BOND, JR.,
Solictor for Respondents.

THE BALTIMORE AND OHIO RAILROAD COMPANY,
[Corporate seal.] By OSCAR G. MURRAY, *President.*
Attest:
C. W. WOOLFORD, *Secretary.*

PARKERSBURG BRANCH RAILROAD COMPANY,
By OSCAR G. MURRAY, President,
[Corporate seal.] JOHN W. DAVIS, *Receiver.*
Attest:
C. W. WOOLFORD, *Secretary.*

STATE OF MARYLAND,
City of Baltimore, to wit:

Oscar G. Murray, being duly sworn according to law, deposes and says that he is the president of the Baltimore and Ohio Railroad Company and of the Parkersburg Branch Railroad Company, the defendants named in the foregoing answer; that he has read the foregoing answer and knows the contents thereof; that the matters and things therein stated are true of his own knowledge, except those stated on information and belief, and as to them he believes them to be true.

Sworn to before me this twenty-ninth day of November, the year 1904.

[Notarial seal.] GEO. W. HAULENBEEK,
Notary Public.

52 EXHIBIT No. 1.

With answer of defendants.

(Filed November 30, 1904.)

Senate. Ex. Doc. No. 1. 42d Congress, Special Session. Letter of the Secretary of War, communicating in compliance with the resolution of the Senate *of the Senate* of the 15th instant, the report of a board of engineers appointed to examine and report upon bridges across the Ohio River. May 17, 1871.—Ordered to lie on the table and be printed.

WAR DEPARTMENT, *May 16, 1871.*

The Secretary of War has the honor to transmit to the United States Senate, in obedience to a resolution of the 15th instant, the final report of a board of engineers, appointed under authority of law, to examine and report upon bridges across the Ohio River.

WM. W. BELKNAP,
Secretary of War.

ENGINEER OFFICE UNITED STATES ARMY,
Newport, Rhode Island, April 19, 1871.

GENERAL: As presiding officer of the board of engineers appointed under section 5, of the river and harbor improvement act, approved July 11, 1870, I transmit herewith our final report; and, in order to give it completeness, we have annexed to it, as appendices, our two preceding partial reports on the subject of bridging the Ohio River. In the part which forms our last report we have recommended a change to be made in but one bridge, viz, that near Steubenville. We are not positive as to whom the expense of making this change should be charges, and the question is one to which we think the attention of Congress should be solicited.

There has been not a little labor expended upon this report and the maps accompanying it, and the endeavor has been to make it as com-

plete as possible in regard to the facts. A large part of this work has been executed by and under the direction of Brevet Colonel
53 W. E. Merrill, and beside any merit that may attach to its execution he must be credited with a large abstraction of his time from the other engineering duties belonging to his station. We are also much indebted for the faithful and comprehensive surveys, measurements, and calculations to Mr. J. P. Colton, civil engineer, who has assisted the board in its investigations.

Yours, respectfully,

G. K. WARREN, *Major Engineers, &c.,*
President of Board.

Brigadier General A. A. HUMPHREYS,
Chief of Engineers, U. S. A.

The maps of the bridges at Wheeling, Louisville, and of the river at Paducah, are not yet finished. All the others have been sent to-day by express.

G. K. WARREN, *Major Engineers.*

APRIL 19, 1871.

GENERAL: The board of engineers appointed by your order, in accordance with section 5 of the act making appropriations for the improvement of rivers and harbors, approved July 11, 1870, have the honor to submit this, their final report. They have already submitted two partial reports, the first of which discussed the Newport and Cincinnati bridge. (It is Appendix D of this report.) The second gave the project of a law for the future regulation of bridges over the Ohio River, with the reasons for the various specified provisions. (It is Appendix E of this report.) With this, their third and last report, they believe they have completed their duty in regard to the bridges built or being built over the Ohio River. Before commencing the detailed discussion of the bridges over the Ohio it will probably be advisable to state a few facts about the river itself.

The Ohio River is formed by the junction of the Monongahela and the Alleghany, at the city of Pittsburg, and thence it flows in a general direction a little south of west to its junction with
54 the Mississippi at Cairo. In its upper course, especially between Pittsburg and Wheeling, it flows over a bed of coarse gravel and boulders, and sometimes of rock, which is but little liable to be moved by an increased velocity of the current. Below Wheeling the gravel becomes finer, the boulders fewer, and bars of river sand appear. This condition of increasing fineness in the materials of the bed continues to the falls at Louisville. Below the falls the river changes very decidedly, assuming the character of a river with a moveable bottom, which it maintains to its junction with the Mississippi. The slope of the river surface at low water varies in the same manner. The following are the average slopes:

From Pittsburg to Wheeling 90 miles, 10.44 inches per mile.

From Wheeling to Letart's Falls, 144 miles, 7.42 inches per mile.

From Letart's Falls to Louisville, 364 miles, 4.68 inches per mile.

From Portland to Cairo, 365 miles, 3.05 inches per mile.

The declivity of the river slope at what is known as "the Falls of the Ohio," at Louisville, has been omitted from the averages given below. It is 25.7 feet in four miles. The entire length of the Ohio River is 967 miles.

The widths of the river, as might be expected, increase gradually from its head to its mouth. The following are the widths between banks at various points:

Distance from Pittsburg.	Place.	Width.
Miles.		*Feet.*
2	Allegheny city	1,100
88	Two miles above Wheeling	900
183	Parkersburg	1,200
285	Little Guyandotte	1,200
353	Portsmouth	1,050
467	Cincinnati	1,100
592	Six miles above Louisville	2,500
55 603	New Albany	1,500
682	Flint Island	2,700
782	Evansville	3,000
852	Five miles below Shawneetown	2,300
920	Paducah	3,500
959	Mound City	4,000

In low water the river does not occupy the entire space between the banks, and at the bars it becomes very narrow. The following table shows its low-water width at several of the more prominent bars:

Distance from Pittsburg.	Name of place.	Low water width.
Miles.		*Feet.*
10	Merriman's	250
214	Buffington	250
455	Four Mile	1,000
502	Rising Sun	350
682	Flint Island	500
765	Scuffletown	900
943	Head of Grand Chain	1,800

It will be observed that these widths increase gradually except at Four Mile Bar. At this point the river is quite wide and shallow, and the bar is not well defined like the others, but partakes of the nature of a shoal. Were the volumes of the river concentrated, the width would probably be about the same as at Rising Sun.

At extreme low water, which, however, only occurs at irregular intervals, the depth on the bars is about 18 inches above the falls and about 30 inches below.

The greatest flood ever known on the Ohio above the mouth of the Wabash was that of February, 1882. Below that point the flood of March, 1867, was the highest known, being 6 inches higher at Caseyville, and 3 feet higher at Paducah. The following list shows the heights above low water of these floods at various points.

56 Distance from Pittsburg.	Place.	Rise.	Flood.
Miles.		*Feet.*	
0	Pittsburg	35. 6	1832
67	Steubenville	45. 0	1832
90	Wheeling	43. 5	1832
94	Bellaire	50. 00	1832
183	Parkersburg	50. 00	1832
232	Letarts Falls	58. 0	1832
267	Gallipolis	54. 0	1832
466	Cincinnati	62. 5	1832
598	Louisville	44. 5	1832
603	New Albany	63. 6	1832
920	Paducah	52. 25	1867
964	Cairo	52. 4	1867

The only continuous records of the rise and fall of the Ohio that we have been able to obtain are those at Pittsburg, Wheeling, Cincinnati, and Louisville. The last three will be found in the reports on the bridges at those cities. As the bridges are discussed in the order in which they are met in descending the river, this is probably the most suitable place for giving the Pittsburg record. The depth of the water at Pittsburg determines the departure of the coal fleets. The coal mines are all up the Monongahela, except a few along Saw Mill Run, and the coal barges come down one or two at a time through the locks and dams of the Monongahela slack water. They accumulate in the harbor of Pittsburg until there is 7 feet or more in the river, and *they* they are formed into fleets of from 8 to 20 boats and barges, and are pushed down the river by powerful towboats. The steamer is always in the rear of the fleet, with about two-thirds of her length projecting behind.

The tables not only show the average duration of each stage, but also the maximum duration of the higher stages. They have been prepared from the official records from August, 1854, to March 1, 1871. These records are continuous, omitting Sundays, up to
57 date. The water is gauged by the pier marks on the Monongahela bridge about a mile above the junction of the Monongahela and the Allegheny, the zero being so placed that the gauge shows the depth of water on the Glass-House Ripple at the head of Brunots Island.

River record at Pittsburg.

AVERAGE DURATION OF EACH STAGE.

[Depth in feet on Glass-House Ripple.]

Month.	5.	6.	7.	8.	10.	15.	20.	25.	30.
January	21.1	16.9	11.8	8.4	4.2	1.1	0.2	0.2	0.1
February	20.1	16.3	13.5	10.9	5.5	1.1	0.2	.....	.....
March	28.9	26.0	22.0	18.0	11.6	2.4	0.4	0.1	0.1
April	28.9	26.4	22.6	18.4	11.1	2.4	0.4	0.1	.....
May	24.4	19.7	14.2	10.1	4.9	0.8	0.4	.....	.....
June	13.6	9.4	6.6	4.4	2.4	0.5	.....	.....	.....
July	7.8	5.2	3.3	2.2	0.6	.....	.....	.....	.....
August	7.0	4.5	2.1	1.1	0.2	.....	.....	.....	.....
September	7.1	5.2	3.8	2.6	1.2	0.2	0.1	0.1	0.1
October	7.5	5.0	3.1	2.4	1.0	0.1	.....	.....	.....
November	14.5	10.2	7.6	5.0	2.3	0.4	0.1	.....	.....
December	22.8	18.5	14.5	11.1	5.6	0.9	.....	.....	.....
In each year	203.7	163.3	125.6	94.6	50.6	9.9	1.8	0.5	0.3

MAXIMUM DURATION OF HIGH STAGE.

Month.	20.		25.		30.		High water of 1832.
	Days.	Year.	Days.	Year.	Days.	Year.	
							Feet.
January	4	1862	4	1862	1	1862	.....
February	2	1867	.....	.....	.....	.....	35.6
March	3	1865	2	1865	1	1865	.....
April	2	(*)	2	1860	.....	.....	.....
May	3	1858	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....
September	2	1861	1	1861	1	1861	.....
October	.....	.....	.....	.....	.....	.....	.....
November	1	1860	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....

* 1859, 1860, 1862.

Each bridge will now be taken up in regular succession from the sources to the mouth of the Ohio, the first one being that at Steubenville, 66½ miles below Pittsburg. The United Laws appointing the board, and those authorizing the construction of the various bridges, are all to be found in Appendix A.

58 STEUBENVILLE BRIDGE.

This is a single track railway bridge now belonging to the Pittsburg, Cincinnati and St. Louis Railroad Company, and it was built in 1862–63, being the first railroad bridge constructed across

the Ohio River. The law authorizing its construction (act approved July 14, 1862) gave the bridge authorities the option of building a continuous bridge 90 feet below low water, with a channel span of 300 feet, or a drawbridge 70 feet above low water, with a channel span of 300 feet, and a pivot draw with two openings of 100 feet each. At the time this law was passed, the question of the proper relations between river and rail transportation, though much discussed in the case of the bridge at Wheeling, was still an unsettled one, and the river interest had not come to a definite conclusion as to what it could safely concede in the matter of height and width of channel, while the railroad interest was equally uncertain as to what lengths of spans could safely be used for iron truss railroad bridges.

The bridge was therefore in a great measure an experimental one, to be judged of by the results. At the time of its construction no iron truss bridge of 300-foot span had yet been built in this country, and railroad men looked upon the 327-foot truss for the passage of the channel with no small apprehension. Bridges on the tubular, girder, and other systems of greater spans had been constructed abroad, but they were very costly and were constructed on principles that were not regarded favorably by American engineers. The Niagara Railroad Suspension Bridge was also on a plan that had many decided opponents. In giving a 300-foot opening the bridge builders thought that they had yielded to the river interest all that could possibly be claimed, and more than was altogether safe for themselves.

It is but just to state that they seem to have acted in good faith and with no disposition to cause any more trouble to opposing interests than was inseparable from the erection of any bridge whatever over the river. The origin of the provision for a low bridge with a draw was somewhat curious. The passenger steamers, ap-
59 parently unwilling to lower their chimneys, insisted upon a draw for their individual accommodation, and were willing to have the bridge made 20 feet lower to procure one. Fortunately this provision was made optional with the bridge company and was not used.

Time and experience have shown the utter incompatibility of bridges with draws with the peculiarities of Ohio River navigation. At the time when this option was conceded the great coal-towing trade, at present the most important on the river, was yet in its infancy, and its great increase in the ensuing decade was not foreseen. Coal was then transported in single flatboats and the fleet system, to which drawbridges are especially injurious, was just coming into vogue. Fortunately for both parties, the company decided on a high bridge without a draw, and thus a barrier that might have greatly crippled the coal trade from the start was not erected.

This bridge, from abutment to abutment, has a total length of 1,859.4 feet, and consists of eight spans of Linville or Keystone trusses of the following lengths from center to center of piers, com-

mencing at the Ohio abutment, viz: 210, 210, 214, 327, 236, 235.7, 235.7, and 235 feet. The distance apart of the channel piers at the low-water line, measured on the line of the bridge is 303¼ feet, but the space available for navigation is much reduced by riprap around the bases of the piers. At the Ohio channel pier the riprap at low water projects 7 feet into the channel, and extends 4 feet above the water surface. At the Virginia channel pier it projects 6 feet and rises 1 foot above the water. The available space for navigation is thus reduced to 290 feet, and this diminution continues until the water is 12 feet above low water, at which time coal boats can pass over the riprap on either side, which they can not do when the river is lower. But at certain stages this practicable space is still further reduced by the obliquity of the piers. At the time of our surveys, the river stood at 10 feet by the pier marks, or at 9 feet above low water, as shown by our levels. At this time our observations
60 for the directions of the current showed that above the bridge it made angles of from 14° to 15° with the axes of the channel piers, and that below, the angles varied from 10½° to 16°. General G. K. Warren made similar observations in June, 1868, at a time when the river was 4 feet above low water, and found that the current then made an angle with the Ohio channel of 15°.

It is well known to all navigators that the direction of the current through the channel span of this bridge varies with the stage of water in the river. Its direction in low and in moderate water is almost entirely determined by the middle, or ferry bar, on the edge of which the Virginia channel pier is located. As the river rises, this bar has less influence, and, in high stages, its effect is imperceptible, the river current being entirely determined by the shape of the bend above. At 4 feet above low water as just mentioned, the current draws on the Ohio Channel pier, striking it under an angle of 15°. At 9 feet, this angle is about 14½°. At higher stages, the current, it is said, commences to straighten. At 13 feet it is about parallel to the piers, and as the depth increased it draws more and more on the Virginia pier. These changes in direction are among the greatest sources of trouble to towboat pilots, as their fleets are managed mainly by the current, and therefore navigators must be well posted as to the exact stages of water at the bridge, and the resulting direction of the current, before attempting the passage.

Add to this the narrowness of the space and the possible obscurity of the atmosphere from river fogs and mists, or from the smoke of the mills at Steubenville, and the reasons for the accidents at this bridge are apparent. The range of the current cannot be less than 30° from 15° on one side of the axis of the piers to at least the same on the other side. If the range be equal on both sides (we have no high-water observations by which to determine this point), it follows that the piers occupy the mean position, and therefore are "parallel to the current of the river as near as practicable." But it is evident from these facts that the locality is one entirely unsuitable for
61 a bridge, besides the fact that it is one of the permanent bars,

where, at low stages, the river is most shoal and most swift. At such places we might naturally expect the greatest variations in the course of the current.

In the pools, on the contrary, the direction of the current is very nearly the same at all stages, and at such places only should bridges be allowed to cross. But it must also be stated that these principles were not well known at the time when this bridge was located, and the company building it very naturally chose the locality that best suited their general line.

At low water the natural section of the river is 3,179 square feet, of which 604 square feet, or 19 per cent, is occupied by the piers of the bridge. At high water the total section between the high-water marks is 77,189 square feet, of which 7,342 square feet, or 9½ per cent, is occupied by the piers and the riprap about them. The approximate discharge of the river at the time of the observations, as measured 300 feet above the bridge, was 37,858 cubic feet per second, with a mean velocity of 3,883 feet per second, or 2.65 miles per hour. At this stage the waterway at the bridge is as great as it is above the bridge, the increased depth between the piers compensating for the partial occupation of the section. The maximum observed velocity through the channel space was 4.35 feet per second, or 3 miles per hour. The channel span is what is known as a "through" or "over-grade" bridge, with the track on the bottom chord. The other spans are "deck" or "under-grade," with the track on the top chord. In consequence of this arrangement the tops of the channel piers are 89 feet above low water and the tops of the other piers are 66¾ feet above, the difference between them being the depth of the trusses of the short spans. There is neither grade nor curvature on the bridge.

The channel piers are of substantial stone masonry, with a section on top 42 by 17 feet, which includes a coping projecting 4 inches, and at low-water line of 78½ by 23¾ feet. The sides have the usual batter of ½ inch per foot, and the tops have the usual stone coping. The upstream ends are provided with ice breakers, with a batter of 9 inches to the foot, and a triangular cross section rising to a height of 41 feet above low water; above the ice breaker the pier has a semicircular section, with a batter of ½ inch to the foot. The downstream ends are semicircular in section, with the usual batter of ½ inch per foot. The other piers are smaller, 30.7 by 10.7 on top, but they are similar in shape. The foundation of the Virginia Channel pier consists of three courses of pine timber, one foot thick, decked over with four-inch plank. All the other piers have under them four thicknesses of timber. The natural bed was excavated so that the lowest water would always cover this deck one foot deep. The stone is laid on this in courses two feet thick. The timber projects one foot beyond the masonry. The riprap protecting the timber platform extends out from 6 to 7 feet and rises up from one to four feet above low water. The Virginia Channel pier stands in shoal water, and is well protected

62

naturally, but the Ohio River pier stands in the deepest water of the cross section, and the river bottom abreast of this pier is on a level with the lowest timber of its foundation. Nothing by the riprap which surrounds it save it from destruction. It is proper to remark here that none of the foundations are as deep as they should be, and the most of the piers owe their stability to riprap. One of the piers deflected 2 feet from the perpendicular while the bridge was being constructed, but a quick and liberal use of riprap prevented further inclination, and it is now probably as safe as the others. While we believe that ordinary floods will not imperil the safety of this structure, yet it is not impossible than an ice gorge at the bridge itself might at some future day do it great damage. The excuse alleged for the defective foundation of this bridge is the poverty of the company that originally began it. Unfortunately these defects cannot be remedied except by outside protection and that has been freely used.

The bottom chord of the channel span is 90 feet above low water and 45 feet above highest water, the greatest known rise
63 being 45 feet. This leave' a sufficient headway under the bridge at all stages, and there is no complaint against it on account of height. No record is kept of the daily stage of water at Steubenville.

The railroad track being on elevated ground on both sides of the river, there is no difficulty in making the approaches to the bridge, which consist of short and inexpensive embankments. In this respect it has a more advantageous site than any other railroad bridge over the Ohio.

This bridge has been a serious hindrance to navigation ever since it was built and the causes are quite clear. The great variability in the river current, and the narrowness of the channel span, which at most stages is oblique to the current and therefore practically much lessened, are in themselves sufficient to account for the trouble heretofore experienced in passing this bridge. An official statement from the president of the Pittsburg Coal Exchange of the losses hitherto incurred by collision with the piers of this and of other bridges over the Ohio River is given in Appendix B. It will be seen that the actual loss by collision with the piers of this bridge, from its construction to the present time, amounts to $61,588. As navigators have in reality no remedy against the bridge companies, but must bear these losses themselves, it is manifest that, though the losses may sometimes be attributed to inexperience and lack of skill, they can never be considered as the result of design. It is unquestionable that bridges over the Ohio (though a public necessity) are a source of danger and loss to the navigation interest. Cases will sometimes arise where the best of skill will not avail, as in a recent accident at Bellaire, where the bridge was so obscured by the smoke of the rolling mills on the banks that when the steamboat "Star," with ten barges of coal, came to the channel span, the pilot was unable to see the piers, and struck one of

them, thereby losing the boat and barges and the lives of two of the crew. Besides this, it is considered almost impossible to take fleets through these bridges at night; and as a rule they are laid up
64 for daylight, which, of course, increases the length and expense of the trip.

The Steubenville Bridge is so very much the worst one on the river that a due regard for the right of the people to have the navigation of the Ohio not needlessly endangered requires that this bridge should be changed.

An examination of the map and profile of this bridge shows that the Virginia Channel pier stands in shoal water near the foot of the ferry bar, while the Ohio pier has deep water on both sides of it. If this alone were to determine the question, the latter should be removed. Before coming to a decision on this matter numbers of prominent coal-boat pilots and owners were consulted, as the change was intended specially for their benefit, and they were unanimous in the request that the Ohio pier be moved, leaving the other where it is. Their principal reason, besides the one above mentioned, was that in coming out of the bend above at Will's Creek they are in the habit of keeping their fleets as near as possible to the Ohio shore, for the double purpose of securing the shore as a guide to facilitate steering and in order that there may be less danger of drifting into the bend on the Virginia side below the bridge.

Under these circumstances the Board of Engineers are of the opinion that the channel span of this bridge should be widened toward the Ohio shore.

In order to make the proposed changes at the least possible cost they have thought it best to utilize the present wide span, throwing out the second and third spans from the Ohio abutment, and introducing one new wide span. The two spans thrown out, 210 and 214 feet, would not be wasted, as they are of dimensions that are frequently employed and could readily be sold or used elsewhere on the road. The first pier would require rebuilding, as the change would bring upon it a much greater weight than that which it now carries, and it would have to be raised to the height of the channel pier in order to carry the present channel truss, with an offset 22 feet
65 lower for the first deck span. In our estimate we give this pier the same dimensions as one of the present channel piers, though it is probable that a less thickness would do as well. The second and third piers would necessarily be thrown out, being replaced by one nearly midway between them. The whole cost of making the change would, then, be the reconstruction of the first pier and the building of a new channel pier, the cost of one new span of 424 feet, and of the removal and re-erection of the present channel span. This expense would be somewhat reduced by the value of the two spans that would be saved for use elsewhere. It would not be necessary to reconstruct the Virginia Channel pier.

Instead of the present spans of 210, 210, 214, and 327 feet to the Virginia Channel pier, we would have 210, 327, and 424 feet, being

three spans instead of four. The last-mentioned span would be the new channel span, and it would give a clear opening, at low water, of 399 feet.

The cost of making the change would be as follows:

One new channel span, 424 feet		$150,000.00
One new channel pier:		
2,944.5 cubic yards masonry, at $18	$53,001.00	
368.5 cubic yards masonry, at $10	3,685.00	
		56,686.00
Preparing foundation		5,000.00
One new pier, to replace No. 1:		
1,624.7 cubic yards masonry from old pier, at $10	$16,247.00	
848.7 cubic yards masonry up to deck span, at $15	12,730.50	
475.1 cubic yards masonry, to finish, at $10	4,751.00	
		33,728.50
Preparing foundations		3,000.00
Removing and rebuilding present channel span, and framing false work		15,000.00
		263,414.50
66 Deduct for spans available elsewhere:		
One span, 210 feet	$35,000.00	
One span, 214 feet	35,000.00	
	70,000.00	
Subtract 10 per cent for previous use	7,000.00	
		63,000.00
Total cost of changes		200,414.50

This estimate is somewhat larger than it would otherwise be, on account of the necessity of so conducting the changes as not to interfere with the traffic of the road. The method of making the changes indicated would probably be to replace Pier No. 1 by a strong wooden pier straddling the present stone one, until the new and larger Pier No. 1 is built up to the height of the present one, and truss No. 1 is seated on its new resting place in an offset of the new pier. At the same time the new channel pier could be built up to the same height. After this is done, spans Nos. 2 and 3 and the channel span could be replaced by trestlework while the new channel pier is raised to its full height, the old channel span removed, and the new channel span is put in place. This might be done during the low water in the summer when coal tows are not running. The work would probably require two seasons for its accomplishment. Some of the stones in Piers 2 and 3 could be used in raising the new piers to their full height, but the greater portion of this material would be

unavailable. It is possible that the new channel span could be built outside of the present channel span before its removal, and thus save filling the channel space with false work; but this plan would not be altogether safe, and has not been considered in the estimate. After the work is finished, the rest of Piers 2 and 3 can be removed, and the material in them can be sold or used elsewhere on the road. The material will about pay the cost of taking down. The new piers should be parallel with the present ones.

As this bridge was built at a time when such long spans were deemed almost impracticable by Congress, and was itself a marked advancement in bridge building, and as it seems to have been
67 built in good faith the board hesitate to recommend that the modifications be made at the expense of the bridge company and regard it as a question for Congress to consider whether, in ordering the change for the benefit of navigation, it would not be proper to bear at least a part, if not the whole, of the expense of making it.

Bridge building is subject to so many contingencies that may increase or diminish the cost that it is impossible to make an estimate that can be considered as rigidly correct. We would recommend that if the Government pays for this work, the bridge company to whom it should be intrusted be directed to keep an exact account of all expenditures, to be audited in the usual way. If the actual cost should exceed the appropriation an additional appropriation can be made to cover it.

WHEELING AND BRIDGEPORT BRIDGES.

These are highway bridges owned by the Wheeling and Belmont Bridge Company, and they connect that portion of the city of Wheeling which is built on Wheeling Island with the city proper and with Bridgeport, in Belmont County, Ohio. The suspension bridge was commenced in February, 1848, and opened to travel in November, 1849. On the 17th of May, 1854, it was destroyed by a hurricane. It was at once rebuilt out of the old material, with a single track, and in 1860 it was again rebuilt with an additional amount of wire in the cables, and new suspending rods. The height of the bridge was not altered during these changes.

These two bridges were erected under authority from the State of Virginia. A violent opposition to the suspension bridge was at once manifested by the river interest, and suit was brought against the bridge company by the State of Pennsylvania on the ground that the bridge was an obstruction to navigation and an illegal structure. The proceedings and testimony in this case are reported at length in the report to the Supreme Court of Special Commissioner R. Hyde Walworth, to whom was intrusted the duty of reporting upon the case. This report was printed at Saratoga Springs in 1851 by George White, and reference is made to it for many interesting details

68 that we must necessarily omit. Pending the suit an act of Congress was passed August 31, 1852 (see Appendix A), legalizing the Suspension Bridge and the Bridgeport Bridge as post routes and lawful structures.

The Suspension Bridge: This is a high bridge on the suspension plan, made for highway traffic. The highest point of its under surface is 91½ feet above extreme low water, and 48 feet above highest water, the extreme oscillation of the river at this place being 43½ feet. For a width of 155 feet it has a height of 91 feet above low water, and for a width of 235 feet a clear headway of 90 feet. It is proper to remark that these widths and the grades on the bridge floor are taken from the levels made by our own surveying party, and that they differ slightly from the measurements as given in Chancellor Walworth's report to the Supreme Court. These discrepancies may be partly due to changes made when the bridge was rebuilt in 1854 and partly to the coldness of the weather at the time of our survey, whereby the suspension cables were necessarily shortened, and the roadway elevated above its mean position.

There is but one span to the bridge, the abutment on the eastern side being at the top of the high bank on which the city of Wheeling is built, and that on the other side being on the shore of the island at the 12-foot line. The distance between the centers of the towers is 1,010 feet, and that between the faces of the two abutments 980 feet. The width of roadways is 16.4 feet, and each sidewalk has a clear width of 4.2 feet, the entire width of the bridge from out to out being 28 feet.

In low water the river does not occupy all the space between the abutment, and consequently the velocity at that time is not affected by the bridge. There are no spans between the towers and the two shores, as the eastern towers are on the natural surface, and a solid embankment of 341 feet in length extends from the western towers to the natural surface of the island. The eastern towers are 15 by 15 at their bases and 60 feet high above the roadway,
69 making their tops 152½ feet above low water. They rest upon a single pier, or abutment, which is built up to the height of the roadway, and they are connected on top by a masonry arch 40 feet above the floor of the bridge. The western towers are 16 by 15 at their bases and 69¾ feet high, their tops being 131½ feet above low water. They are also built upon a single mass of masonry and are similarly connected on top. The eastern abutment is founded upon the sand of the high bank upon which it is placed, and the western upon the river gravel a few feet above low-water mark. The bank under the eastern abutment is carefully paved with stone on edge as also the shore of the island between the western abutment and the low-water line.

In low water, as mentioned before, the bridge occupies no part of the waterway. In extreme high water the western abutment and the bridge approaches occupy 6,137 square feet, which is 14 per cent of

the entire high-water section at the bridge site. The mean velocity of the river at this stage will not, however, be increased by this amount, as at extreme high water the entire width of the island between the two bridges is covered and the waterway is ample.

The roadway at the face of the eastern abutment is 91.6 feet above low water. From this point the floor of the bridge rises with the following grades per 100 feet, viz, 2.56 for 50 feet, 2.54 for 50 feet, 2.06 for 50 feet, and 0.97 for 16½ feet, at which point it attains its greatest elevation of 95.34 feet above low water, having risen 3.74 feet in a distance of 166½. From this point the roadway descends with the following grades per 100 feet: 1.58 for 33½ feet, 3.52 for 50 feet, 4.26 for 50 feet, 4.80 for 50 feet, 4.33 for 500 feet, 3.80 for 50 feet, and 3.55 for 84 feet, at which point it reaches the face of the western abutment where the elevation of the roadway is 62 feet above low water, and 33⅓ feet below the highest point of the bridge. The length of this descending grade is 817½ feet measured on the floor.

The following tables are compiled from a record of from seventeen to twenty-one years, some of the months being missing in the
70 earlier years. The record commences in 1840, is continuous to 1850, omits subsequent years to 1861, and thence is carried on to January 1, 1871, with some omissions during the period of the late war. The depths reported at Wheeling are those on the bar opposite the lower end of the city. At extreme low water there is one foot on this bar, and therefore the heights above low water are one foot less than those given in the table.

River record at Wheeling.

AVERAGE DURATION OF EACH STAGE.

[Height in feet on Wheeling Bar.]

Months.	5.	10.	15.	20.	25.	30.	35.	40.
January	30.5	14.9	7.3	3.5	1.2	0.2	0.1	0.1
February	25.5	13.1	5.6	2.9	1.0	0.3	0.2	.....
March	30.5	20.8	10.4	4.8	2.6	1.2	0.1	.....
April	28.3	15.4	6.1	1.7	0.5	0.1	.....	.....
May	28.9	13.3	5.4	1.5	0.5	0.1	.....	.....
June	21.4	3.9	0.7	0.1	.....	.....	.....	.....
July	12.6	2.2	0.5	.....	.....	.....	.....	.....
August	7.0	0.4	.....	.....	.....	.....	.....	.....
September	8.8	2.7	0.8	0.3	.....	.....	.....	.....
October	11.5	2.3	0.8	.....	.....	.....	.....	.....
November	22.7	5.8	1.2	0.3	0.2	0.1	.....	.....
December	26.8	13.0	6.2	2.5	0.6	0.2	0.2	.....
In each year	254.3	107.8	45.0	17.6	6.6	2.2	0.6	0.1
Headway under bridge.	87½	82½	77½	72½	67½	62½	57½	52½
Headway available	86	81	76	71	66	61	56	51

River record at Wheeling—Continued.

MAXIMUM DURATION OF HIGH STAGE.

Months.	20.		25.		30.		35.		40.		High water of 1832.
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	
											Feet.
January	12	1870	7	1870	3	1862	2	1862	1	1862	.....
February	17	1840	9	1840	5	1840	3	1840	....	.....	44½
March	15	1868	12	1868	7	1841	1	1835	....	.....	.....
April	12	1843	3	1843	1	1869	....	.....	....	.....	.....
May	7	1838	3	1838	1	1838	....	.....	....	.....	.....
		& 1840	....	.....	....	& 1849	....	.....	....	.....	.....
June	2	1839	....	.....	....	.....	....	.....	....	.....	.....
July	0	.....	....	.....	....	.....	....	.....	....	.....	.....
August	0	.....	....	.....	....	.....	....	.....	....	.....	.....
September	2	1868	....	.....	....	.....	....	.....	....	.....	.....
		1869	....	.....	....	.....	....	.....	....	.....	.....
October	1	1847	....	.....	....	.....	....	.....	....	.....	.....
November	4	1847	2	1847	1	1847	....	.....	....	.....	.....
December	9	1847	6	1847	4	1847	3	1847	....	.....	.....
Headway under bridge	72½		67½		62½		57½		52½		48
Headway available	71		66		61		56		51		46½

71 There have been no actual losses of boats at this bridge, though when first built, before steamboats had made arrangements to lower their chimneys, much danger as well as loss by detention was occasioned. This was entirely due to the efforts made to pass this bridge with chimneys standing, but since that has been given up, and boats on the upper river have been provided with hinged chimneys, there has been neither loss nor detention. We therefore have no changes to recommend in this bridge.

Its original cost was $161,594. The repairs on account of the hurricane of 1854 cost $37,000 and the partial reconstruction in 1860 cost $55,000.

The Bridgeport Bridge: This bridge is over the western branch of the Ohio, which at Wheeling is divided by Wheeling (formerly Yane's) Island. It belongs to the same company as the Suspension Bridge and was built under the same law of the State of Virginia, and legalized by the same act of Congress. It is one of the common kinds of wooden bridges, being a "long" truss strengthened by arches. It is in bad condition, and needs rebuilding. This bridge is 638 feet in length and consists of three spans of about 212 feet each. Each span is composed of three trusses, with two roadways 10½ feet in the clear between them and two balcony sidewalks 5 feet wide on the outside.

The channel to the west of Wheeling Island is no longer used for navigation. In order to improve the draught of water on Wheeling Bar, the western channel has been closed by a six-foot dam just below the mouth of Indian Cheeling Creek. Under these circumstances it was unnecessary to make any current observations or to examine this bridge in detail. The bridge is 53 feet above low water and 9½ feet above highest water. Rafts and flats can at all times pass under, and no passage way is required for steamboats. Under these circumstances we have no changes to recommend in this bridge. Its original cost was $68,000.

72 BELLAIRE RAILROAD BRIDGE.

This is a single-track bridge, and is being built by the Baltimore and Ohio Railroad Company, under the general authority given by the act of July 14, 1862. It crosses the Ohio four miles below Wheeling, and connects the main stem of the Baltimore and Ohio Railroad with the Central Ohio. The bridge is a "high" bridge, 4,001½ feet long, and that portion over the river consists of six spans of the following dimensions, beginning on the Ohio side, viz: 210, 241½, 348, 213, 212, and 211 feet, so that the bridge proper has a length of 1,435½ feet. These dimensions are from center to center of piers, and are in excess of the clear waterway. The trusses are of the Linville, or Keystone, pattern, the two longest being "through" or "overgrade," and the rest "deck" or "undergrade." The two "through" spans are both channel spans, giving clear openings at low water of 322 and 220 feet, respectively. It will be noted that in both of the bridges built by the Baltimore & Ohio Railroad Company, the span adjacent to the main channel span (required by law to give an opening of at least 220 feet) is made a channel span as well as the longest span. This was doubtless the intent of Congress in directing that one of the spans adjacent to the channel span should give a 220-foot opening; but the act does not require the track to be on the bottom chord, and it is not so placed in either the Steubenville or Newport and Cincinnati bridges. Moreover, in this bridge the law only requires a clear opening of 300 feet, while the company has voluntarily given 22 feet more.

The bottom chords of the channel spans are 91½ feet above low water, but the track being supported on roadways bearers, suspended below the bottom chords, the lowest line of the channel span is 90 feet above low water, and 40 feet above highest water. There is no daily record of the stage of water kept at Bellaire, but leveling from the highest known watermarks make the maximum oscillation of the river surface 50 feet. The two main channel piers, Nos. 3 and 4, are each 91 feet above low water; No. 2, the Ohio pier of the 220-
73 foot channel is 90 feet above; and the others are lower, conforming to the grades of the bridge. The foundation of pier No. 2 was laid by means of a cofferdam, but the other river piers were commenced in caisons, the bed of the river having first been dredged to the required depth. All of the piers in the river rest on

grillages composed of three thicknesses of 12 by 12 oak timber. The grillages of the main channel piers (3 and 4) are 78 by 28, of the others 76 by 26. The top of the foundations of Nos. 3, 4, and 5 are 15 feet below low water; of No. 2, 9 feet below, and of No. 6, 5 feet below. The depths at which these foundations have been placed contrast very favorably with the shallow foundations of the Steubenville and the Newport and Cincinnati bridges.

There is no riprap at the low-water line about either of the main channel piers. The line of current approaching the channel span above, as indicated by 6-foot, makes with the piers an angle of 4°. It makes with the perpendicular to the line of the bridge an angle of 8½°, but the piers themselves in order to conform to the line of the current are set askew, and the trusses rest on tow courses of stone, placed at an angle of 4½° with the piers, but at right angles to the axis of the bridge. By this arrangement the rights of navigation are preserved without injury to the shape of the superstructure. It is believed, from the shape of the river above, that at higher stages the current will become exactly parallel to the bridge piers, and we therefore conclude that the company has complied with the law that the piers shall be parallel with the current. This point could only be determined positively by waiting for high water, but the time at our disposal did not permit such a delay, and as all our information tended to corroborate the statement given above, and as the details of the piers showed a manifest intention on the part of the company to comply with the law, we did not deem it necessary to investigate the matter further. The position chosen for the bridge is on a straight section of the river where no great changes of current can occur.

The contraction of the channel way, due to a current making an angle of 8½° with the axis of the bridge, is 8⅜ feet, and therefore, at the observed stage (8½ feet by the Wheeling marks), the practicable opening at this bridge of 313½ feet, or 13½ feet *feet* more than required by the law. At most stages the reduction would probably be much less. We could make no observations on the current through the minor channel span, as at the time of the survey this span was filled with scaffolding for the truss, which was in process of erection, and a boom above deflected all floating bodies. The direction of the current through this space is probably the same as that through the principal channel opening.

74

The main channel piers are 76 by 26 at the bottom, where they rest upon the grillage, and are built up square at the low-water line; here there is an offset all around of 15 inches, and the piers are again carried up square to 4½ feet above low water. At this elevation their dimensions are 75½ by 23½. Above this the sides have the batter of one-half inch to the foot, the tops of the piers terminating 5 feet below the bridge seat with the dimensions of 41 by 16. The trusses rest upon a square prism of masonry, 5 feet high, 26 by 14, placed at right angles to the axis of the bridge, and therefore making an angle of 4½° with the axis of the pier.

The ice breaker is a part of the pier, and commences 4½ feet above low water, with a slope of 1 on 1, and terminates 29½ feet above; it is built with steps of 2 feet rise and the same tread. These steps are to be filled with iron angle blocks. Above the ice breaker the upstream end has a batter of one-half an inch to the foot. The downstream end has the same batter, commencing 4½ feet above low water. In horizontal sections, both up and down stream ends are circular. The other piers in the river are similar to the main channel piers, but they are somewhat smaller. The masonry, 74 by 24 at bottom, is 70 by 21 at the point where the batter commences, and 33 by 12 on top.

The grades and curvature on the bridges and approaches are as follows, commencing on the Ohio side.

75

Distance.	Grade in feet per mile.	Curvature.	Remarks.
830	52.8	5°	Arcade.
660	52.8	Tangent	
422	26.4	Tangent	
589.5	.....	Tangent	Channel spans.
546.5	44.5	Tangent	
953.5	44.5	5°	
4,001.5			

The approaches on the Ohio side consist of 43 semicircular stone arches, 33⅓ feet from center to center (the entire length being 1,490 feet), and two spans of Bollman deck bridge 105 and 107 feet long, respectively. This approach is very massive and imposing and reflects great credit upon the company, being as safe and as durable as a track on solid ground, and permitting any rate of speed with safety. The piers of the arches is 12 feet wide on top, being designed for a single track. The piers of the arcade are all founded on 3 feet of concrete, laid at various depths from 8 to 26 feet below the natural surface. The two shore piers, between the end of the arcade and the bridge proper, are 22 by 10 on top, also resting on 3 feet of concrete placed at depths of 20 and 6 feet, respectively, above low water.

The approaches on the Bentwood or Virginia side consist of eight Bollman deck trusses, each with a span of 108 feet, making a total length of 864 feet. The piers for these trusses have the same general dimensions as the shore piers on the Ohio side, and their foundations are from 10 to 30 feet below the natural surface. The arcade on the Ohio side was nearly finished at the time of our inspection, but very little had been done on the Virginia side. The bridge will probably be finished during the coming summer.

At the time the surveys the water stood at 8.5 by the marks at Wheeling. At this time the section of the river, at a point 800 feet above the bridge, was 11,105 square feet, and the discharge was 36,261 cubic feet per second, showing an average velocity of 3,265 feet
76 per second or 2,226 miles per hour. The floats through the channel span had a velocity of 3.1 miles per hour. The actual

waterway on the line of the bridge at the date of the survey was 10,532 square feet, which being 5 per cent less than the natural section above, showed that the average velocity of the water must be increased 5 per cent on account of the space occupied by the piers. The total high-water section at the bridge site is 74,787 square feet, of which 6,735 square feet or 9 per cent is occupied by the bridge piers, and this would probably cause an increase in the mean velocity at that state of the same amount. The low-water section is 3,425 square feet, of which 506 square feet or 15 per cent is obstructed. This, however, would make no material difference as the bridge is built in a pool.

No regular record of the rise and fall of the river having been kept at this locality, the duration of the various stages can only be ascertained approximately by an examination of the record at Wheeling, which is only four miles above. It should be kept in mind, however, that the maximum oscillation at Bellaire is reported at 50 feet, while at Wheeling it is 43½.

The losses at this bridge up to date, as given in the statement of John F. Dravo, president of the Coal Exchange (Appendix B), amount to $60,500. Some of these were due to cause connected with the process of construction that will not be permanent.

The greatest objection to the location of this bridge is the proximity of extensive rolling mills on both sides of the river. The smoke from these mills frequently lies so low that navigation, even without a bridge, is made difficult. This is a cause, however, that admits of no remedy, unless a law should be made to compel factories to consume their smoke, of which there seems no present likelihood. The accidents to the towboat "Star," referred to in connection with the Steubenville Bridge, is an illustration of the incidental dangers of navigating the upper Ohio.

77 The board have not only no changes to recommend in this bridge, but they feel called upon to commend both the excellent manner in which it is constructed, and the liberality with which the company has secured to navigators, at considerable extra expense, more than there were required by law to give.

We have not been able to ascertain what will be the cost of this bridge when finished, but it will probably be the most expensive work of the kind on the river. The money, however, will have been wisely expended.

PARKERSBURG BRIDGE.

This is a single-track railway bridge, belonging to the Baltimore and Ohio Railroad Company, and it is designed to connect their Parkersburg branch with the Marietta and Cincinnati Railroad. It has just been finished, having been opened to travel in February last. It has been constructed under the general authority to bould bridges above the mouth of the Big Sandy, which is given by the act of July 14, 1862 (Appendix A), under which the Steubenville and Bellaire Bridges are built. It is a "high" bridge, with a total length between abutments of 4,262 feet. That portion over the river consists of six

spans of the following dimensions, commencing from the north of Belpre side, viz, 210, 350, 350, 210, 210, 210, making a total length over the river proper of 1,540 feet. These dimensions are from center to center of piers and must be reduced by the widths of the piers to get the clear waterway. These trusses are of the Linville, or Keystone, pattern, the two longest being "through" or "overgrade" bridges, and the others "deck," or "undergrade." The two high spans are both channel spans, and give clear openings at low water, measured on the axis of the bridge of 326½ feet. The bottom chords of the channel spans are 91½ feet above low water, but the track being supported by roadway bearers suspended below the bottom chords, as in the Bellaire Bridge, the lowest line of the channel spans is 90 feet above low water and 40 feet above highest water. There
78 is no daily record kept here of the stages of the river, but the greatest known *a*scillation is reported to be 50 feet. The tops of all the piers in the river, excepting the first one on the Ohio side, are 91 feet above low water; the latter is somewhat lower, conforming to the grade of the bridge. The foundations of piers 1 and 7 are 3 feet below water; of 2, 3, 4, and 5, 20 feet below; and that of No. 6, 18 feet below. No. 1 has its foundation 16 feet below the natural surface; No. 2, 21 feet; No. 3, 12 feet; No. 4, 9 feet; No. 5, 15 feet; No. 6, 20 feet; No. 7, 40 feet. All of these piers are built upon grillages composed of three courses of 12 by 2 white-oak timber, projecting on all sides 2 feet beyond the masonry. Piers 2 and 6 are reported to rest on the rock. The foundations of all the river piers were put in place by means of cofferdams, the lower portions of which were made solid with 12 by 12 timbers up to 5 feet below the low-water line. This part of the work was begun in May, 1869, and completed before the close of the season. There will be no riprap at the low-water line about any of the river piers. Their foundations are laid so deep that but little protection will be necessary, and what is used will be below low water, and thus the entire channel way will be available for navigation.

This bridge being located in a bend, the currents are naturally curved, varying somewhat with the different stages of the river. No floats could be sent through the northern channel span, as at the time of observations it was obstructed by a boom and trestlework. Under these circumstances the most accurate method of determining the angle between the piers and the current was to find the normal to the curves of the current and then the angle between this normal and the line of the bridge. The angle thus determined was found to be 5° 30′, and this therefore is the angle between the axis of the piers and the line of the current. The contraction of the available width by this obliquity is 8½ feet, thus leaving two practicable channelways of 318 feet each. As the law only required one channel space of 300 feet, the bridge company are deserving of very
79 great credit in not only providing two channel spans instead of one, but in making each 18 feet wider than required by law for the widest. We are credibly informed that it was the original intention of the company to have built this bridge exactly like that

at Bellaire, but after they had started the piers of their main channel span a protest was made against this span by the coal-boat interest. The latter claimed that although the main span was over the deepest water of the river it was yet not over the coal-boat channel, as the very abrupt bend in the Ohio just below the bridge made it necessary for coal tows to hug the Ohio shore that they might not drift on to the Virginia shore after passing the bridge. An estimate was made of the cost of making an additional channel span near the Ohio shore, and it was found that it would increase the cost of the bridge by $60,000. The railroad company very liberally offered to bear half of this additional expense provided the coal men furnished the other half. The latter decided that unless they obtained the new channel span they might in a single year lose more by collision or by running ashore than the sum required, and therefore the money was advanced at once. A full statement of the amount paid by each subscriber is given in Appendix C, certified to by the president of the coal exchange. This is one of those special cases showing how important it is that the positions of bridge piers should be carefully decided upon by some disinterested authority before they are commenced.

The whole course of the railroad company forbids the supposition that they designed unnecessarily embarrassing navigation, and yet a serious obstruction would have been caused but for the expenditure of a large sum by the principal towboat owners.

Piers 23 and 4 are 82 by 26 feet at bottom where they rest on the timber foundations. They are carried up to low-water line with vertical off-sets, and at that elevation they measure 75 by 24 feet. From low water the sides are carried up to the bridge seat with the batter of one-half inch to the foot. On the upstream ends the ice breakers are formed like those at Bellaire, with 2-foot off-sets on a slope of 45° to the height of 26 feet. Above them the upstream end is
80 built up with the same batter as the sides to within 4 feet of the top, where there are 2-foot offsets. The downstream ends have the usual batter with similar off-sets at top. The dimensions of the channel piers on top are 33 by 16 feet. The other river piers are similar in construction to the channel piers but smaller. They are 60 by 23½ at bottom and 33 by 12 on top.

The grades and curvature on this bridge and its approaches are as follows, commencing at the face of the abutment on the Ohio or northern shore:

Distance.	Grade in feet per mile.	Curvature.	Remarks.
202	52.8	Tangent	Ohio approach.
520	52.8	4° 20′	
210	52.8	Tangent	Main bridge.
1,287	.....	Tangent	
53	.....	4° 20′	
600	39.6	4° 20′	Virginia approach.
1,390	39.6	Tangent	
4,262			

The approaches from the Ohio side, commencing from the abutment and not including a long and high embankment, consists of six spans of Bollman deck trusses, each span being 121 feet, making a total length of 726 feet. These trusses rest on piers whose dimensions on top are 21 by 7 and 24 by 7. They have the usual batter and are founded upon 3 feet of concrete at depths below the natural surface, varying from 6 to 8 feet.

The approaches on the Virginia side consist of a great number of spans, some of which are both short and low, the authorities at Parkersburg having objected to the construction of masonry arches. Commencing at the Virginia abutment, they are as follows: Seven spans of girder bridge, each 25 feet long; four spans of girder,
81 each 29 feet long; one through bridge, of 65 feet span over Market Street; six Bollman deck bridges, each 59 feet long; one Bollman deck bridge, of 65 feet span over Julian Street; six Bollman deck bridges, each 59 feet long; one Bollman deck bridge, of 65 feet span, over Ann Street; and eight Bollman deck bridges, each 100 feet long, up to the first span of the river. The total length of the Virginia approach from the abutment is 1,994 feet. The piers from this approach vary in size on top from 10 by 4 to 18 by 8 feet. They are built with the usual batter, and the seven nearest the bridge proper rest on foundations of 3 feet of concrete, land and depth of from 7 to 25 feet below the natural surface.

At the time of the surveys the water stood at 8 feet by the gauge of the Baltimore and Ohio Railroad at Parkersburg. At this time the section of the river at a point 900 feet above the bridge was 15,676 square feet and the discharge was 41,058 cubic feet per second, showing a mean velocity of 2,619 feet per second, or 1¾ miles per hour. The floats through the channel span showed a velocity of 2.4 miles per hour.

The actual waterway on the line of the bridge at the date of the survey was 13,749 square feet, which, being 12 per cent less than the natural section above, showed that the average velocity of the water must be that much increased by the piers. It should be remarked, however, that the cofferdams had not yet been removed, and the waterway was more obstructed than it will be in the future. The total high-water section at the bridge site is 114,854 square feet, of which 11,177 square feet, or 10 per cent, is occupied by the bridge piers, and this would probably cause an increase in the mean velocity at that stage of the same amount. The low-water section is 7,271 square feet, of which 608 square feet, or 8 per cent, is obstructed. This, however, would cause no injurious effect.

The losses at this bridge up to date, as reported in Appendix B,
amount to $45,900. As the pilots become more familiar with
82 the bridge these losses will probably nearly cease. That they should altogether cease is improbable, as winds, smoke, fogs, and accidents to machinery will still continue to occasionally cause collisions, which, however, must be considered as the irremediable

dangers that will always attend river navigation. The board have no changes to recommend in this bridge, which, like the one at Bellaire, has been admirably built and with the most liberal care for the interest of navigation. It is a possibility that in the future it will be found that the main spans of these bridges are too narrow. Should that prove to be the case, we think that any changes that may subsequently become necessary should be made at the national expense. The total cost of this bridge, as reported by the chief engineer, James L. Randolph, has been $1,223,500.

NEWPORT AND CINCINNATI BRIDGE.

This is a combined railroad and highway bridge crossing the Ohio River about one mile above the Covington and Cincinnati Suspension Bridge and connecting the cities of Newport, in Kentucky, and Cincinnati, in Ohio. It belongs to a bridge company, and if being constructed under the authority of the joint resolution of March 3, 1869 (Appendix A), which is supplementary to the act of July 14, 1862.

This bridge was in process of construction as a "low" bridge, with a draw 70 feet above low water, but the Forty-first Congress in its third session ordered that the bridge be raised to 100 feet above low water, as recommended in our report to the Chief of Engineers, dated December 21, 1870, which has been printed as Executive Document No. 22 of the third session of the Forty-first Congress. For a detailed description of this bridge and of the changes recommended, reference is made to that document, which, corrected for typographical errors, is submitted again (Appendix D) as a part of this report.

In recommending that this bridge be raised, and in estimating the cost of doing so, we did not feel at liberty to change its alignment, though there was no reason why the company should not do so if they thought best. The change has been so recently ordered that it
83 is yet uncertain what changes in the location of the approaches may be adopted, and therefore we have nothing to add to our previous report. Any modification of the Cincinnati approach, however, is an unimportant matter for navigation, as probably no change will be made in that portion of the bridge which spans the river. The losses by collision with piers and cofferdams of this bridge amount to $4,000. (Appendix B.)

COVINGTON AND CINCINNATI SUSPENSION BRIDGE.

This is a highway, owned by the Covington and Cincinnati Bridge Company, and connecting the city of Covington, in Kentucky, with the city of Cincinnati, in Ohio. It was commenced in 1856 and the two piers were raised to the level of high water. The financial crisis

of 1857 caused a stoppage of the work, and it was not resumed until 1863. From that time forward the work of construction progressed rapidly, and the bridge was finally opened to travel on the 1st of January, 1867, eleven years after the foundations were begun. It is a magnificent structure and one of which the citizens of the two cities are justly proud. This was the second bridge actually begun over the Ohio River, and it will be instructive to indicate the course of legislation in regard to its height and span. The first charter was granted by the State of Kentucky, in February, 1846, with no restrictions as to height or span, but a proviso prohibiting the erection of any bridge "which may obstruct the free and common navigation of the said River Ohio." This charter was confirmed by the State of Ohio in March, 1849, with the additional proviso "that the said bridge shall not be less span that 1,400 feet, nor of less elevation at the center of the river than 112 feet above low-water mark." In March, 1856, the charter of the bridge company was amended by the State of Ohio so as to permit a span of 1,000 feet, but the height of the center was increased to 122 feet. In January, 1863, the State of Kentucky authorized a reduction of height at the center to 100 feet above low water; and in March, 1863, the State of Ohio concurred in this reduction. In March, 1865, that State of Ohio passed a general act authorizing the construction of bridges over the
84 Ohio River, "Provided, That the span of any such bridge be not less than the Ohio River at the point where the same is located, at low-water mark, and the height of any such bridge in the center shall not be less than 100 feet above the surface of the water at low-water mark."

The Covington and Cincinnati Bridge was declared by act of Congress, approved February 17, 1865 (Appendix A), to be a lawful structure when completed in accordance with the laws of the State of Ohio and Kentucky. This bridge comes under the class of "high" bridges with continuous spans. It is built on the suspension plan, being supported by two large wire cables, strengthened by stays and stiffened by iron girders and trusses. For a full description of the details, most of which must necessarily be omitted here, reference is made to the report of John A. Roebling, the engineer in chief, dated April 1, 1866. The roadway is 52 feet wide, with two side-walks, outside of the cables, 8 feet wide, making the total width of the bridge 68 feet. Between the abutments the entire length of the bridge is 1,057 feet. The highest point of the suspension is in the middle of the bridge, and at the time of the survey it was 168 feet above low water, and 40 feet above highest water. This distance corresponds to a mean temperature of 60°, and they are increased or diminished one foot by the cold of winter or the heat of summer. At this mean temperature it has a clear headway of 100 feet above low water for a width of about 450 feet in the middle. The bridge consists of one main span and two half spans on either side. The southern side of the Cincinnati pier is located 35 feet

north of the low-water mark, and the center of the Covington pier is 1,057 feet south of the center of the Cincinnati pier, with its river side 30 feet south of the low-water mark, there being between them a clear opening of 1,005 feet. The river side of the base of the Cincinnati pier of 18.8 feet above low water and of the Covington pier 17.1 feet above. The width of the river between the piers at dead low water is 940 feet. Both piers being thus out of the water at low water, the velocity at this stage is not affected by the bridge.

85 The side spans have each a clear width of 255 feet between abutments and piers. The bridge approaches commence at Front Street, in Cincinnati, gradually rising on a mass of masonry, 160 feet in length, to Water Street (66 feet wide), which is crossed by a bridge of plate girders, strengthened by wire-rope hog chains. Between Water Street and the wharf, a distance of 104 feet, the roadway rests on a solid mass of masonry, which also serves as an anchorage for the cables. Then come in succession the Cincinnati half span, the main span, and the Covington half span to the Covington abutment. From this abutment to Second Street is a mass of masonry, which also serves as the anchorage for the cables on the Kentucky side. The distance between the face of this abutment and Second Street is 300 feet. On the Cincinnati side the foot of the approach on Front Street is 2½ feet below extreme high water, but on Second Street, in Covington, it is 8½ feet above.

Each pier is 82 by 52 feet at the base, and rises to the height of 9½ feet above low water in one mass, solid under the towers but hollow between them. Above this level begin the separate towers for the two cables which are united near the top by a masonry arch whose crown is 75 feet above the floor, with a span of 30 feet over the opening between the towers for the roadway. Including the ornamental turrets on top, the height of the towers is 230 feet above low water and 167½ feet above high water of 1832, the greatest flood known on the upper Ohio.

The foundations of the Cincinnati pier rest on a bed of compact gravel 12 feet below extreme low water. The rock bottom of the river was found to be 12 feet lower, but it was deemed unnecessary to excavate to that depth. The foundation consists of twelve courses of timber, [illegible] and eight courses on the land side, of 12 by 12 inches, with [illegible] bedding, joints [illegible] alternate layers [illegible] right angles. Timbers [illegible] with [illegible] and [illegible] same [illegible] with [illegible]. The timbers were from [illegible] feet in length, and the platform was 110 feet long by 74 feet wide. [illegible] In each pier there is 20,000 cubic feet of masonry, and the weight on each square foot of the foundation, including the weight of the superstructure and of the load, is 8,8[illegible] tons. The foundation of the Covington pier is laid on a stratum of mixed sand and gravel, 6 feet below low water mark, the solid rock being 11 feet deeper. Seven courses of timber were laid in this pit in the same manner as on the Cincinnati side and on the platform thus formed

the pier was built. Between each pier and the low-water mark the surface was protected by a sloping riprap. This, however, does not obstruct the channel as it is on the same slope as the whaves. Special care was given to the Covington riprap, which was bound together by a strong cribwork with a sunken flatboat at its foot.

The river at the site of the bridge has a width, at low water, of 940 feet, and a cross section of 6,526 square feet. At 6 feet above low water (the stage at the time of the survey), it had a width of 950 feet, and a cross section of 11,940 square feet. At both of these stages the piers were out of water, and the river was entirely unobstructed. At a stage of 18.8 feet, the water reaches the nearest side of the Cincinnati pier, and at 17.1, the nearest side of the Covington pier. At extreme high water the section is 80,475 square feet, of which 5,500, or 6½ per cent, is obstructed by the piers. The mean velocity at that stage would, therefore, be increased in this proportion by the bridge.

The grades on the bridge and its approaches vary somewhat on account of its arched shape. The heaviest grade is on the half spans, being 5.3% per 100, or 1 in 18¾ for a distance of 280 feet. On the main span the grades are much less.

The following tables on the stage of the water during the last twelve years have been compiled from the official records kept at the Cincinnati waterworks. The first table is the same that heretofore published in our special report on the Newport and Cincinnati Bridge, excepting that the headway refers to the Suspension
87 Bridge. The other table showing the longest duration of the higher stages, is compiled from the same records, and has been added to supply a deficiency that was felt during the debate on the alteration on the Newport Bridge:

River record at Cincinnati.

AVERAGE DURATION OF EACH STAGE.

(Height in feet above low water.)

Years.	0	10	15	20	25	30	35	40	45	50	55
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

River record at Cincinnati—Continued.

MAXIMUM DURATION OF HIGH STAGES.

Months.	20.		25.		30.		35.	
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.
January	31	1870	29	1870	16	1870	14	1870
February	26	1867	26	1867	21	'62 & '67	18	'62 & '67
March	31	'59 & '62 '63 & '65 '67 & '70	31	'59 & '62 '65 & '67	20	1865	23	1865
April	30	'62 & '67 '69 & '70	28	'65 & '70	21	1862	17	1862
May	26	1865	22	1865	17	1865	13	1865
June	22	1858	20	1858	19	1858	13	1858
July	15	1859	5	1859				
August	0							
September	13	1866	10	1856	7	1866	4	'66 & '69
October	14	1861	10	1861	5	1861		
November	20	1864	11	1864	7	1861	4	1861
December	28	1865	21	1858	9	1865	5	1864
Headway under bridge	60		38		22		09	
Headway available	510		732		770		991	

Months.	40.		45.		50.		55.		High water in 1859.
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	
January	10	'62 & '70	9	1870	6	'62 & '70	6	1862	Feet.
February	13	1867	13	1867	7	'59 & '67	6	1858	69
March	19	'65 & '67	14	1867	10	1867	6	1867	
April	13	1862	8	1870	5	1859	4	1859	
May	8	1865	6	1865	3	'59 & '65	3	1859	
June	4	1858			2		2		
July									
August									
September	2	'66 & '69							
October									
November	2	1861							
December	1	1864							
Headway under bridge	05		05		05		05		05
Headway available	614		564		514		464		64

No losses have ever been reported as caused by this bridge, and we have no changes to recommend. The original cost of the bridge, including land, and cost of anything, as directly chargeable to the construction account, was $4,450,000.

[illegible]

This bridge, sometimes known as the Ohio Falls Bridge, is a rail road, not a foot bridge, and it crosses the Ohio at the head of the falls, extending from a point just below the city of Jeffersonville, in Indiana, to the foot of Fourteenth Street, in the city of Louisville. It belongs to a special bridge corporation, and serves to connect the Indiana railway system with the roads on the south of the Ohio that centre at Louisville. The bridge company was chartered by the State of Kentucky, with authority to construct a bridge that should

not obstruct the navigation of the Ohio "further than the laws of the United States and the decisions of the Supreme Court shall hold to be legal." Their authority from the United States is derived from the act of Congress, approved February 17, 1865, which is supplementary to the act of July 14, 1862, under which the Steubenville, Bellaire, and Parkersburg Bridges are built. Under these acts the company were authorized to build any one of the three following styles of bridges, viz: 1. Continuous, 90 feet above low water; 2. With a draw 70 feet above low water; 3. With three draws, 56 feet above low water.

The location of this bridge is peculiar, and the provisions of the act of 1862 do not apply very well. The authority to build under that act might have caused a great deal of injury to navigation had its provisions been interpreted to the letter. At the falls of the Ohio there are really three navigable channels to be crossed—the Indiana chute, the middle chute, and the canal. As the act in question only contemplated one channel, an illiberal interpretation might have resulted in seriously affecting navigation through the others. Fortunately, the company met the difficulties of the case in a most commendable public spirit, and they not only adopted the highest
89 of the three bridges, but they largely increased the channel ways that they were required to give. This bridge, as built, belongs to the class of "high" bridges, as distinguished from the bridges with draws, and an elevation of but 70 feet. It has a single railroad track and two sidewalks, each 7.2 feet wide, and its total length between abutments is 5,218⅔ feet. The spans, commencing at the abutment on the Indiana or north shore, are as follows: 99, 149.6, 180, 180, 180, 398¾ (Indiana chutes), 245½, 245½, 245½, 245½, 245½, 245½, 270 (middle chute), 227, 227, 210, 210, 180, 180, 149.58, 149.58, 149.58, 149.58, 132, 132 (draw over canal), 50, 50. These dimensions are from center to center of piers, and they are greater by the half widths of two piers then and clear water-way. The trusses themselves are of the two styles patented by Mr. Albert Fink, the chief engineer of the bridge. The two channel spaces are spanned by Fink triangular trusses, and all the others, except the draw, by Fink trussed girders. The draw-bridge is what is generally known as a Warren girder, differing only from the triangular in that the latter has certain additional members that are necessary to adapt it to long spans. The former are "through" or "over-grade" bridges, and the latter "deck" or "under-grade." The clear water-way at the Indiana chute, measured on the low-water line, is 380 feet and at the middle chute 352¼ feet. The roadway bearers of the channel-spans are suspended below the bottom chords, and consequently the height under the bridge available for steamboats must be measured to these members. The line of the roadway bearers of the Indiana channel span is 96½ feet above low water and 45½ feet above highest water, the maximum oscillation being 51 feet. At the middle channel space the river is dry at low water, and the available space above the river bed is 90 feet. These two channel spans are on the same

level, but at the Indiana channel the break in the rocky ledge is 1,000 feet above, while at the middle channel it is 6,000 feet below.

The line of the crest of the falls is exceedingly irregular, crossing the line of the bridge between the two channel-spans nearly at right angles.

90 The tops of the four channel piers, and of all piers between them, are 97¼ feet above low water of the Indiana chute. The others are lower, conforming to the grades of the bridge.

The foundations of all the piers of this bridge were laid on the solid rock, and therefore there is no need of any riprap protection around them.

Current observations were made by the surveying party, but there were of little practical value. The water was too low to permit boats to cross the falls, and therefore it was of no importance to ascertain the angles between the current at this stage and the piers. As the river rises the effect of the falls becomes gradually less perceptible, and the currents become more and more regular, until in high water the falls entirely disappear. We have good reasons for believing that the bridge is as nearly as possible at right angles to the current at navigable stages, and therefore did not think it worth while to incur the expense of a special survey at high water. The right pier of the Indiana Channel space is 64 feet 6 inches by 17 feet 10½ inches at bottom, thence it is carried up vertically, with 10½ inches of offsets to 10 feet about low water. Above this the sides have the uniform batter up to the coping of seven-sixteenths of an inch per foot. The left pier is 65 feet 6 inches by 18 feet 8 inches at bottom, and is carried up vertically, with 1 foot 6¼ inches of offsets, to 18 feet above low water. Above this the sides have the usual batter. The up and down stream ends of the pier are built alike, with starlings, formed by the intersection of arcs of circles with radii of 12½ feet. They are copied by hoods at high-water mark, and above this are finished with semicircular sections. These piers on top (without coping) measure 33 by 10. The piers of the middle channel are 64 by 17¾ feet at bottom, and 33 by 10 on top, with starlings and hoods like the other channel piers. The other piers are similarly constructed, excepting that above the lower starlings and hoods they have another starling and hood, which makes a shorter length of pier on top. The

91 top dimensions of Pier No. 7 (without coping) are 21 by 7, the dimensions at bottom being 45⅝ by 14½.

The grades and curvatures on this bridge and its approaches are as follows, commencing at the face of the abutment on the Indiana, or northern, shore:

Distance.	Grade.	Curvature.	Remarks
785.1	78.6	Tangent.....	Indiana side.
2,241.75	.....	Tangent.....	Channel spans and spans between.
2,192.82	79.14	Tangent.....	Kentucky side.
5,219.67			

The approach to this bridge on the Indiana shore consists of a long and high embankment. This, however, does not properly belong to the bridge, and, in accordance with the rule adopted for other bridges, was consider that we have reached the end of a bridge when we come to earthwork. Under this rule, this bridge has no approaches; the entire space from abutment to abutment being waterway.

This bridge crosses the Louisville and Portland Canal 1,700 feet below the guard lock at the head. An unobstructed passageway for steamboats is secured by means of a draw, giving a clear opening of 114 feet over the canal. The other end of the draw projects over a portion of the river, and by modifying the canal bank on this side so that it shall just have the width of the pivot of the draw it will be practicable for steamboats in high water to ascend the river without lowering their chimneys. This is a very valuable provision for boats that habitually run where there are no bridges, which yet may occasionally wish to go above Louisville. In low water such boats can pass through the canal, and in high water, by using the other end of the same draw, they can pass up the river, even should they be too wide to get through the new locks. The changes in the canal bank necessary to permit this use of the northern end of the draw are being made by the United States as a necessary adjunct to the enlargement of the canal.

92 The total high-water section of the river on the line of the bridge is 216,249 square feet, of which 13,573 square feet, or 6 per cent, is occupied by the piers. This contraction would probably cause no perceptible increase of velocity. The low-water section is 1,377 square feet, of which 60 square feet, or 4½ per cent, is obstructed. All the water at this stage is running through the Indiana chute, but, there being no navigation possible, the effect of the piers need not be considered.

The losses by collision with the piers of this bridge, up to date, amount to $26,704. (Appendix B.)

The board have no changes to recommend in this bridge, which then consider a first-class structure throughout, and very much less an obstruction than it might have been had its builders limited themselves to giving only what they were compelled by law to give. On the contrary, they have chosen to build according to the highest of the three authorized plans, and have exceeded the heights and widths than even this plan required, spending $150,000 more than was necessary to comply with the letter of the law. Instead of a 300-foot opening at low water one of their channel spans gives 380 feet and the other 352¼ feet. The total cost of the bridge, from abutment to abutment, was $1,615,120.

If it should be found by experience that, owing to the peculiar location of this bridge, the channel space on the Indiana side can not be safely run by coal tows, then a still wider opening will be necessary. Present difficulties, however, may possibly be due to a lack of experience. Should it be found, however, that there are inevitable

dangers due to this exceptional location, which no amount of experience can avoid, it will be manifestly necessary to widen the span to 500 feet, or in some manner to modify existing conditions so as to facilitate the passage of the present opening.

The record of the average and the extreme stages of the river for the years 1851, 1858, 1859, 1866, 1867, 1868, 1869, and 1870,
93 is given in the following tables for the head and foot of the falls. No other records of the stage of water on the falls could be obtained, as the main channel opening of the bridge is located below the head and above the foot of the falls, and the exact space under the bridge can not be obtained from these tables, and has therefore been omitted. At the head of the falls the heights above low water are also the available depths for navigation, as during extreme low water the rocks in the channel are bare.

River record at head of falls.

AVERAGE DURATION OF EACH STAGE.

[Height in feet above low water.]

Months.	5	8	10	15	20	25	30	35
January	20.6	8.5	5.5	2.2	1.2	1.1	0.5	.....
February	18.9	7.7	5.7	3.1	2.7	2.5	1.1	.....
March	29.1	15.0	10.1	5.5	3.0	1.7	1.1	0.4
April	26.5	10.7	8.1	3.4	1.6	.....	.....	.....
May	19.1	6.0	4.0	1.0	0.6	0.4	.....	.....
June	10.4	2.7	2.1	0.9	.....	.....	.....	.....
July	3.0	.....	.....	.....	.....	.....	.....	.....
August	0.1	.....	.....	.....	.....	.....	.....	.....
September	4.1	1.7	1.0	0.4	.....	.....	.....	.....
October	2.1	0.6	0.3	.....	.....	.....	.....	.....
November	2.7	.....	.....	.....	.....	.....	.....	.....
December	17.4	6.0	2.4	0.9	.....	.....	.....	.....
In each year	154.0	58.9	39.2	17.4	9.1	5.7	2.7	0.4

MAXIMUM DURATION OF HIGH STAGES.

Months.	20		25		30		35		High water of 1832.
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	
									Feet.
January	10	1870	9	1870	4	1870	.....	.....	.....
February	13	1867	12	1867	5	1859	.....	.....	41.5
March	20	1867	14	1867	9	1867	3	1867	.....
April	6	1870	.....	.....	.....	.....	.....	.....	.....
May	5	1859	3	1859	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....	.....	.....

94 *River record at foot of falls.*

AVERAGE DURATION OF EACH STAGE.

[Height in feet above low water.]

Months.	5.	8.	10.	15.	20.	25.
January	31.0	31.0	29.1	24.0	18.1	12.0
February	28.0	28.0	22.4	18.4	13.4	9.7
March	31.0	31.0	31.0	28.7	25.4	18.8
April	30.0	30.0	29.9	28.4	25.6	17.4
May	31.0	30.3	26.9	20.6	13.6	9.4
June	30.0	26.6	22.9	11.6	6.4	4.3
July	29.3	12.3	6.9	4.3	1.6	.....
August	23.9	7.3	4.4	0.3	.....	.....
September	18.1	9.4	7.9	4.9	3.4	2.1
October	17.3	6.6	5.0	2.6	1.6	1.0
November	20.4	9.6	8.4	3.3	1.6	.....
December	29.3	27.0	24.1	19.3	12.4	8.0
In each year	319.3	249.1	219.0	166.4	123.1	82.7

Months.	30.	35.	40.	45.	50.	55.	60.
January	7.4	5.0	2.7	1.7	1.3	0.7	.....
February	6.3	4.9	3.4	3.1	2.9	1.9	.....
March	14.3	8.7	6.0	3.6	2.6	1.4	0.7
April	11.0	7.0	4.0	2.4	0.3	.....	.....
May	7.6	3.6	1.1	0.7	0.6	.....	.....
June	3.1	2.0	1.0	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....
September	1.8	1.0	0.4	.....	.....	.....	.....
October	0.7	0.3	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....
December	4.9	1.7	0.9	.....	.....	.....	.....
In each year	57.1	34.2	19.5	11.5	7.7	4.0	0.7

MAXIMUM DURATION OF HIGH STAGES.

Months.	20.		25.		30.		35.		40.	
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.
January	31	1870	25	1870	16	1870	15	1870	13	1870
February	26	1867	25	1867	20	1867	18	1867	14	1867
March	31	1859, 1867, and 1870	31	1867	30	1867	22	1867	21	1867
April	30	1869	23	1870	19	1870	16	1870	14	1870
May	25	1858	20	1858	17	1858	14	1868	6	1859
June	23	1858	22	1858	21	1858	14	1858	7	1858
July	9	1869	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	12	1868	10	1866	9	1866	4	1866	2	1866
October	7	1866	4	1866	3	1866	2	1868	.....	.....
November	11	1866	.....	.....	.....	.....	.....	.....	.....	.....
December	26	1866	16	1858	13	1858	8	1858	6	1858

River record at foot of falls—Continued.

MAXIMUM DURATION OF HIGH STAGES—Continued.

Months.	45.		50.		55.		60.		High water of 1832.
	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	
									Feet.
January	11	1870	9	1870	5	1870			
February	13	1867	12	1867	7	1867			63.6
March	20	1867	16	1867	10	1867	5	1867	
April	8	1870	2	1870					
May	5	1859	4	1859					
June									
July									
August									
September									
October									
November									
December									

95 The marked discrepancy between the oscillations at the head and at the foot of the falls is due to the tendency of all rivers when in flood to obliterate all irregularities in their beds, and to establish a regular surface slope. During low stages the rise below the falls is three feet for one foot above. This ratio gradually decreases as the river rises, until a depth of 18 feet is attained at the head of the falls, after which the rise is the same above that it is below.

THE PADUCAH BRIDGE.

The authority to construct a bridge at Paducah was granted by the joint resolution to Congress approved April 7, 1869 (Appendix A), which is supplementary to the act of July 14, 1862. The authority is exactly the same as that for constructing the Newport and Cincinnati bridge, and if the company so elect, it will permit the construction of a similar bridge to that which Congress had just ordered to be raised. In our report of February 7, 1871, which has been printed as Executive Document No. 128, of the third session of the Forty-first Congress, we recommend that the joint resolution of April 7, 1869, be repealed, and that a general act be passed to regulate the construction of all future bridges over the Ohio, a copy of which is embodied in this report. (See Appendix E.) If built under this act it is believed that the bridge at Paducah will not be injurious to navigation. As no steps have yet been taken toward building this bridge, the law can now be readily changed.

There are no regular observations kept at Paducah of the rise and fall of the river, but the maximum oscillation is reported as 52¼ feet. As the duration of high stages is much longer in this portion of the river than it is above, there is a much greater necessity for a high bridge. The river slope in the lower Ohio is much more gentle than it is above the falls. From Pittsburg to Beaver Shoals the fall averages 14 inches per mile, while from Portland to Cairo it is only 2½ inches per mile. This reduced fall makes a more gentle current, and

as the river is quite straight above and below the bridge site,
96 there ought to be no difficulty in passing through a 400-foot channel space. It should be remarked, however, that as the proposed bridge is below the mouths of the Cumberland and the Tennessee, there will probably be a greater number of boats to pass this bridge. A low drawbridge at this locality would be an even greater obstruction than at Cincinnati, and therefore the law authorizing one should be repealed.

The average duration of different stages of water, as reported by Mr. Harrington, the city engineer of Paducah, is as follows:

Between low water and 10 feet	6 months.
Between 10 and 20 feet	2½ months.
Between 20 and 30 feet	1½ months.
Between 30 and 40 feet	5 months.
Between 40 and above	3 weeks.
	12 months.

The duration of high stages is quite variable, however. The river averages 40 feet and over twice in every three years, though there have been periods of four successive years it was over 40 feet each year, and one year it exceeded this height four times. The highest water ever known was in 1867, which exceeded all previous floods by three feet.

No definite location having been given to this bridge, we did not deem it necessary to take our surveying party to make current observations. A map accompanies this report, showing the locality and the soundings, as made by the bridge engineers in their preliminary surveys. On these soundings the low-water section is 33,400 square feet and the high-water section is about 257,600 square feet.

CONCLUSION.

The following tabular statement of the principal features of the bridges over the Ohio, together with the cost of each bridge as far as can be ascertained, is appended. Nothing but the actual cost between abutments has been taken, all land damages and connections with the main branch having been excluded:

97

(74) Bridges.	Length of approach from right bank.	Length of approach from left bank.	Total length, including approaches.	Maximum grade per mile (equated).	Maximum curvature.
	Feet.	*Feet.*	*Feet.*	*Feet.*	° ′
Steubenville railroad	0	0	1,895.4	0	0
Wheeling (highway)	0	0	980.0	25.3	0
Bridgeport (highway)	0	0	638.0	0	0
Bellaire railroad	1,490	864	4,001.5	60.3	5
Parkersburg railroad	726	1,994	4,262.0	59.3	4 20
Newport and Cincinnati, as commenced	950	230	2,961.5	57.2	10
Newport and Cincinnati, as altered	2,400	1,680	5,861.5	66.0	10
Covington and Cincinnati (highway)	0	0	1,619.0	28.3	0
Louisville railroad	0	0	5,218¾	79.1	0
Paducah railroad					

Bridges.	Above low water.	Above highest water.	Maximum local rise.	Width at low water of channel openings on axis of bridge.	Cost.
	Feet.	*Feet.*	*Feet.*	*Feet.*	
Steubenville railroad	90	45	45	303½	$1,000,000(?)
Wheeling (highway)	91½	48	43½	980	161,594
Bridgeport (highway)	53	49½	43½	212	68,500
Bellaire railroad	90	40	50	(322) (220)	Unfinished.
Parkersburg railroad	90	40	50	(326½) (326½)	1,223,550
Newport and Cincinnati, as commenced	71½	9	62½	400	*820,394
Newport and Cincinnati, as altered	100	37½	62½	400	*1,109,089
Covington and Cincinnati (highway)	103	40½	62½	1,005	1,480,000
Louisville railroad	96½	45½	51	(380) (352½)	1,615,120
Paducah railroad			52½		Not begun.

*Estimated.

NOTE.—The lengths of earthen embankments are not included in the above.

The following maps and drawings accompany this report: Railroad bridge at Steubenville, highway bridges at Wheeling and Bridgeport, railroad bridge at Bellaire, railroad bridge at Parkersburg, railroad and highway bridge at Newport, highway bridge at Covington, on one sheet; railroad bridge at Louisville, site of proposed railway bridge at Paducah. Each sheet shows the plan of the bridge and a map of the river for at least half a mile above and the same distance below, on the scale of 1 inch to 200 feet, with all current observations accurately platted thereon. The profile of each bridge and two elevations of a channel pier are given on a scale of 1 inch to 20 feet. Each sheet also contains a small map, on a scale of 2 inches to the mile, showing the bends in the river for about five miles above and the same distance below. The Paducah sheet is like others, excepting that no bridge is represented.

Appendix A contains the United States laws appointing the
98 Board of Engineers, and those authorizing the construction of the various bridges. Appendix B contains a statement of the losses sustained by collision with the piers of these bridges. Appendix C contains a statement of the sums paid by various parties to secure an additional channel span in the bridge at Parkersburg. Appendix D contains our special report on the Newport and Cincinnati bridge, with the errors corrected which were made in the printing of it as H. Ex. Doc. 32, third session Forty-first Congress. Appendix E contains our report, H. Ex. Doc. 128, third session Forty-first Congress, dated February 7, 1871, submitting a project for a

general law in relation to bridging the Ohio River, and our reasons for its provisions.

G. K. WARREN,
Major, Engineers, and Brevet Major General.
G. WEITZEL,
Major, Engineers, and Brevet Major General.
WM. E. MERRILL,
Major, Engineers, and Brevet Colonel.

Brigadier General A. A. HUMPHREYS,
Chief of Engineers, U. S. A., Washington, D. C.

APPENDIX A.

An act making appropriations for the repair, preservation, and completion of certain public works on rivers and harbors, and for other purposes, for the fiscal year ending June thirtieth, eighteen hundred and seventy-one.

Public — No. 152.

SEC. 5. And be it further enacted, That the Secretary of War is hereby authorized and required to detail three engineers, whose duty it shall be to examine all bridges now erected or in process of erection across the Ohio River, and to report whether in their opinion such bridges, or any of them, as now constructed, do or will interfere with the free and safe navigation of said river; and if they do or will so interfere, to report also what extent of span and
99 elevation above water will be required to prevent obstruction to navigation, and their estimate of the cost required to change such bridges now built, or being built, to such width of span and elevation above the water as will prevent obstruction to navigation, such report to be made and communicated to the next session of Congress.

Approved, July 11, 1870.

AN ACT TO ESTABLISH CERTAIN POST-ROADS.

An act to establish certain post-roads.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the bridge part'y constructed across the Ohio River at Steubenville, in the State of Ohio, abutting on the Virginia shore, off said river, is hereby declared to be a lawful structure: Provided, That when completed, if constructed without a draw, it shall leave an unobstructed headway in the channel of the river of not less than ninety feet above low-water mark, and such channel or waterway shall have an unobstructed width of not less than three hundred feet between the piers next to said channel or waterway; and one of the spans next adjoin-

ing thereto shall not be less than two hundred and twenty feet in length; or said bridge, if constructed with a draw, the same to be constructed under the limitations and conditions provided in the fourth section of this act.

SEC. 2. And be it further enacted, That the said bridge and Holliday's Cove Railroad are hereby declared a public highway, and established a post-road for the purpose of transmission of mails of the United States, and that the Steubenville and Indiana Railroad Company, chartered by the legislature of the State of Ohio, and the Holliday's Cove Railroad Company, chartered by the State of Virginia, or either of them, are authorized to complete, maintain, and operate said road and bridge when completed, as set forth in the preceding section, anything in any law or laws of the above-named States to the contrary notwithstanding.

100 SEC. 3. And be it further enacted, That it shall be lawful for any other railroad company or companies, whose line or lines of road may now or shall hereafter be built to the Ohio River, above the mouth of the Big Sandy River, in accordance with the terms of the charter or charters of such company or companies, to build a bridge across said river, for the more perfect connection of any such roads and for the passage of trains thereof, under the limitations and conditions hereafter provided.

SEC. 4. And be it further enacted, That any bridge erected under the privileges of this act may, at the option of the company or companies building the same, be built either as a drawbridge, with a pivot or other form of draw, or with unbroken and continuous spans: Provided, That if the said bridge shall be made with unbroken and continuous spans, it shall not be of less elevation than ninety feet above low-water mark over the channel of the said river; nor in any case less than forty feet above extreme high water, as understood at the point of location, measuring for such elevation to the bottom of the bridge; nor shall the span of such bridge covering the main channel of the river be less than three hundred feet in length, with also one of the next adjoining spans of not less than two hundred and twenty feet in length, and the piers of said bridge shall be parallel with the current of the river as near as practicable: And provided also, That if any bridge built under this act shall be construed as a drawbridge, the same shall be constructed with a span over the main channel of the river, as understood at the time of the erection of the bridge, of not less than three hundred feet in length, and said span shall not be less than seventy feet above low-water mark, measuring to the bottom chord of the bridge, and one of the next adjoining spans shall not be less than two hundred and twenty feet in length; and also that there shall be a pivot draw constructed in every such bridge at an accessible and navigable point, with spans of not less than one hundred feet in length on each side of the central or pivot pier of the

101 draw: And provided, also, that said draw shall always be opened promptly, upon reasonable signal, for the passage of boats whose construction may not at the time admit of their passing

under the permanent spans of said bridge, except that said draw shall not be required to be opened when engines or trains are passing over said bridge, or when passenger trains are due, but in no case shall unnecessary delay occur in the opening of said draw after the passage of such engines or trains.

SEC. 5. And be it further enacted, That any bridge or bridges erected under the provisions of this act shall be lawful structures and shall be recognized and known as post routes, upon which also no higher charge shall be made for the transmission over the same of the mails, the troops and munitions of war of the United States, than the rate per mile which the company or companies erecting such bridge may from time to time receive on the balance of their line or lines for such services, and the officers and crews of all vessels, boats, or rafts navigating the Ohio River are required to regulate the use of the said vessels and of any pipe or chimneys belonging thereto, so as not to interfere with the elevation, construction, or use of any of the bridges erected or legalized under the provisions of this act.

Approved, July 14, 1862.

An act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, one thousand eight hundred and fifty-three, and for other purposes.

SEC. 6. And be it further enacted, That the bridges across the Ohio River at Wheeling, in the State of Virginia, and at Bridgeport, in the State of Ohio, abutting on Zane's Island, in said river, are hereby declared to be lawful structures in their present position and elevation and shall be so held and taken to be, anything in any law or laws of the United States to the contrary notwithstanding.

SEC. 7. And be it further enacted, That the said bridges are declared to be and are established post roads for the passage of the mails of the United States, and that the Wheeling and Belmont
102 Bridge Company are authorized to have and maintain their said bridges at their present site and elevation; and the officers and crews of all vessels and boats navigating said river are required to regulate the use of their said vessels and boats, and of any pipes or chimneys belonging thereto, so as not to interfere with the elevation and construction of said bridges.

Approved, August 31, 1852.

A resolution giving the assent of the United States to the construction of the Newport and Cincinnati Bridge.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the consent of Congress be, and the same is hereby, given to the erection of a bridge over the Ohio River from the city of Cincinnati, Ohio, to the city of Newport, Kentucky, by the Newport and Cincinnati Bridge

Company, a corporation chartered and organized under the laws of each of the States of Kentucky and Ohio: Provided, That said bridge is built with an unbroken or continuous span of not less than four hundred feet in the clear from pier to pier, over the main channel of the river, and is built in all other respects in accordance with the conditions and limitations of an act entitled "An act to establish certain post roads," approved July fourteenth, eighteen hundred and sixty-two. That said bridge, when completed in the manner specified in this resolution, shall be deemed and taken to be a legal structure, and shall be a post road for the transmission of the mails of the United States, but Congress reserves the right to withdraw the assent hereby given in case the free navigation of said river shall at any time be substantially and materially obstructed by any bridge to be erected under the authority of this resolution, or to direct the necessary modifications and alterations of said bridge.

Approved, March 3, 1869.

An act to establish a bridge across the Ohio River at Cincinnati, Ohio, a post road.

103 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the bridge across the Ohio River at Cincinnati, in the State of Ohio, and at Covington, in the State of Kentucky, is hereby declared to be, when completed in accordance with the laws of the States of Ohio and Kentucky, a lawful structure and post road for the conveyance of the mails of the United States.

An act supplementary to an act approved July fourteen, eighteen hundred and sixty-two, entitled "An act to establish certain post roads."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act of Congress, approved July fourteen, eighteen hundred and sixty-two, entitled "An act to establish certain post roads," shall be, and the same is hereby, so amended as to authorize the Louisville and Nashville Railroad Company and the Jeffersonville Railroad Company (stockholders in the Louisville Bridge Company) to construct a railroad bridge over the Ohio River at the head of the falls of the Ohio, subject to all the provisions of said act: Provided, That the said bridge may be constructed at a height of not less than fifty-six feet above low-water mark, and with three draws, sufficient to pass the largest boats navigating the Ohio River; one over the Indiana chute, one over the middle chute, and one over the canal: Provided, That the spans of said bridge shall not be less than two hundred and forty feet, except over the Indiana and middle chute and the canal; said bridge shall be constructed with draws of one hundred and fifty feet wide on each side of the pivot pier over the Indiana and middle chutes and ninety feet wide over the canal: And provided further, That said

bridge and draws shall be so constructed as not to interrupt the navigation of the Ohio River.

SEC. 2. And be it further enacted, That the bridge erected under the provisions of this act shall be a lawful structure, and shall be recognized and known as a post route.

104 Approved, February 17, 1865.

Joint resolution authorizing the building of a railroad bridge over the Ohio River, at Paducah, Kentucky.

Be it resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the consent of Congress be, and the same is hereby, given to the erection of a railroad bridge over the Ohio River from the city of Paducah, Kentucky, to the State of Illinois, by the Paducah and Gulf Railroad Company and such others as may associate with them for that purpose under the laws of the States of Kentucky and Illinois: Provided, That said bridge is built with an unbroken or continuous span of not less than four hundred feet in the clear, from pier to pier, over the main channel of the river, and is built in all other respects in accordance with the conditions and limitations of an act entitled "An act to establish certain post roads," approved July fourteenth, eighteen hundred and sixty-two; that said bridge when completed in the manner specified in this resolution, shall be deemed and taken to be a legal structure, and shall be a post road for the transmission of the mails of the United States; but Congress reserves the right to withdraw the assent hereby given, in case the free navigation of said river shall at any time be substantially or materially obstructed by any bridge to be erected under the authority of this resolution, or to direct the necessary modifications and alterations of said bridge.

Approved, April 7, 1869.

105 APPENDIX B.—*Official statement of losses by collision with the piers of bridges over the Ohio River.*

STEUBENVILLE BRIDGE.

Date.	Owners.	Towboats.	Losses.	Amount.
May —, 1863	John F. Dravo		2 floating boats and coal.	$5,000
July 25, 1865	Horner, Wood & Co.	Warrior	1 barge and coal	3,350
May 9, 1867	Wm. H. Brown	Mary Davage	2 barges and coal	5,600
Mar. 12, 1868	Hays Coal Company	Diamond	do	4,500
Mar. 12, 1868	Stone & Co.	Coal Valley	3 barges and coal	8,500
Mar. 12, 1868	J. N. and W. O'Neil & Co.	Fred. Wilson	1 barge and coal	2,300
Apr. 22, 1869	Horner, Wood & Co.	Ella	2 barges and coal	4,000
Apr. 22, 1869	do	do	1 flatboat and coal	2,500
Apr. 22, 1869	do	do	1 fuel boat	900
Dec. 2, 1869	Wm. H. Brown	Sampson	7 barges and coal	17,638
Dec. 2, 1869	do	do	5 fuel boats	4,500
Dec. 5, 1869	Horner, Wood & Co.	Simpson Horner.	1 flatboat and coal	2,800
Total				61,588

APPENDIX B.—*Official statement of losses by collision, etc.*—Continued.

BELLAIRE BRIDGE.

Date.	Owners.	Towboats.	Losses.	Amount.
Dec. 5, 1869	B. M. Laughlin.....	Boaz	1 brick boat and bricks	$2,500
Dec. 5, 1869	Wm. H. Brown.....	Resolute	1 flatboat and coal..	2,000
Dec. 5, 1869	Dippold & Co.....	Reindeer	1 barge and coal....	2,000
Jan. 14, 1870	J. D. Johnson & Co....	Star	Steamer, total loss..	28,000
Jan. 14, 1870	.....do.....	.....do.....	6 barges and coal...	12,000
Jan. 14, 1870	.....do.....	.....do.....	1 coal boat and coal (two lives lost).	6,000
Mar. 1, 1871	J. V. McDonald & Co..	Lioness.....	2 barges and coal...	6,000
Mar. 2, 1871	N. J. Bigley	Picket.....	1 coal boat and coal.	3,000
Mar. 3, 1871	Marshal McDonald....	Fearless.....	.....do.....	3,000
Total...	.....	.....	.....	60,500

PARKERSBURG BRIDGE.

Date.	Owners.	Tow-boats.	Losses.	Amount.
Mar. 12, 1868	Dippold & Co.....	Tigress.....	1 barge and coal.....	$2,000
Sept. 4, 1869	J. Gilmore.....	Gilmore.....	.....do.....	2,000
Dec. 5, 1869	Hays Coal Company ..	Diamond.....	2 barges and coal....	4,000
Dec. —, 1869	William Robbins.....	Gilmore.....	1 barge and coal.....	2,000
Dec. 25, 1869	J. Gilmore.....	.....do.....	.....do.....	2,000
Jan. 30, 1870	William H. Brown....	Greyhound ..	.....do.....	2,000
		Passenger boats.		
Jan. —, 1870	Boothe, Battelle & Co.	Rebecca	Steamer, total loss (4 lives lost).	30,000
Feb. 6, 1870	.....do.....	Maj. Anderson.	Steamer damaged...	1,400
Nov. 24, 1869	W. Gusis & Co.....	Ellena May..	Steamer damaged. (Pilot injured.)	500
Total...	.....	.....	.....	45,900

NEWPORT AND CINCINNATI BRIDGE.

Date.	Owners.	Tow-boats.	Losses.	Amount.
Dec. —, 1870	Mulvehill & Co.....	Tom Rees, No. 2.	1 barge and coal....	$2,000
Dec. —, 1870	Peytona Coal Company	Pierpont.....	.....do.....	2,000
Total...	.....	.....	.....	4,000

LOUISVILLE BRIDGE.

Date.	Owners.	Tow-boats.	Losses.	Amount.
Dec. 13, 1869	J. S. McDonald.....	A. J. Baker...	1 coal-boat and coal.	$3,000
Dec. 25, 1869	William H. Brown....	Mary Alice...	4 coal-boats and coal	15,892
Dec. 25, 1869	.....do.....	.....do.....	1 barge and coal....	1,812
Mar. 15, 1869	J. S. McDonald.....	Hornet.....	.....do.....	2,000
May —, 1870	Stuart & Graves.....	Bengal Tiger.	.....do.....	2,000
Feb. 25, 1871	A. J. Hutchinson.....	Newcomb....	.....do.....	2,000
Total...	.....	.....	.....	26,704

Grand total of losses at bridges, $198,692.

107 The losses by collision with the piers of bridges spanning the Ohio River, heavy as it is, constitute but a small item of the aggregate loss resulting from such obstructions. The great loss sustained is by detention, arising from the necessity of landing our towboats and waiting for daylight, not daring to run the narrow channel-ways at night, thus involving loss of time and extra expense of crews and fuel, in addition to the extra hazards of landing our immense tows. Even passenger boats at certain stages of water have to land and wait for daylight. The aggravating character of these obstructions will be apparent if we suppose the trains of any important railroad under the necessity of stopping every fifty or one hundred miles to wait for daylight to pass certain artificial obstructions crossing their road. Would it be endured? This is precisely the hardship imposed upon the river navigation by bridge obstructions.

JOHN F. DRAVO,
President Pittsburg Coal Exchange.

APPENDIX C.

Subscriptions to Parkersburg Bridge fund.

	Amounts paid.
1. William H. Brown	$4,100.00
2. Horner, Wood & Co	2,460.00
3. J. C. Risher & Co	1,640.00
4. Joseph Walton & Co	1,640.00
5. Thomas Fawcett	820.00
6. Hays Coal Company	820.00
7. N. J. Bigley	1,640.00
8. J. V. McDonald	820.00
9. D. & J. S. McDonald	820.00
10. Lysle & Son	820.00
11. Bailey, Whigham & Co	820.00
12. Briggs & Mulvehill	820.00
13. Oniel & Co	820.00
14. John Dippold	574.00
108 15. Hornet Coal Company	820.00
16. John Gilmore	820.00
17. J. D. Johnson, Star Coal Company	410.00
18. Duncan, Cornell & Co	820.00
19. William Stone	820.00
20. James Blackmore	820.00
21. Miller & Williams	820.00
22. James Watson	820.00
23. Dunshee, Whitmore & Co	656.00
24. R. C. Gray	820.00
25. Miller & Lynn	656.00
26. Joseph Nixon	164.00
27. Samuel Clarke & Sons	820.00

	Amounts paid.
28. W. Mays	410.00
29. T. W. Flower	246.00
30. J. S. Neil & Co	820.00
31. Iron City Coal Company	820.00
32. Staib & Co	164.00
33. Warner Coal Company	400.00
34. W. S. Packer	300.00
35. B. F. Wilson	136.67
36. Samuel Roberts	136.67
37. William Cunningham	136.66
38. Thomas Jones	136.67
	31,586.67

Paid Bridge Company	$30,000.00	
Paid committee expenses: For collections, traveling, visiting Washington City, and Parkersburg attorney's fees, &c	1,586.67	
		31,586.67

JOHN F. DRAVO,
President Pittsburg Coal Exchange.

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APPENDIX D.

DECEMBER 12, 1870.

GENERAL: The board appointed by your order, in accordance with section 5 of the act making appropriations for the improvement of rivers and harbors, approved July 11, 1870, have examined the Newport and Cincinnati Bridge, now in process of construction over the Ohio River, and present the following special report upon this work. Section 5 referred to above is as follows:

And be it further enacted, That the Secretary of War is hereby authorized and required to detail three engineers, whose duty it shall be to examine all bridges now erected or in process of erection across the Ohio River, and to report whether, in their opinion, such bridges or any of them as now constructed or proposed to be constructed do or will interfere with the free and safe navigation of said river; and if they do or will so interefere to report also what extent of span and elevation above water will be required to prevent obstruction to navigation, and their estimate of the cost required to change such bridges now built or being built to such width of span and elevation above the water as will prevent obstruction to navigation, such report to be made and communicated to the next session of Congress.

The duties imposed by the above law are so thorough and comprehensive as to require a lengthened report. To facilitate its consultation by those who wish to arrive at a knowledge of only the general features of the case and of our conclusions and recommendations, we have made the first part of our report somewhat of a summary of the whole, and have placed the details of each division of

the subject in separate chapters for the use of those who wish to thoroughly examine the subject and judge for themselves.

The Newport and Cincinnati Bridge Company possesses under the law approved July 14, 1862, and the joint resolution approved March 3, 1869, the option of building a bridge not less than 40 feet above the highest water without a draw span, or a bridge
110 not less than 70 feet above lowest water with a draw span, with the reservation by Congress of the right to withdraw the assent given "in case the free navigation of the river shall at any time be substantially and materially obstructed by any bridge to be erected under the authority of this resolution, or to direct the necessary modifications and alterations of said bridge."

We are unanimously of the opinion that this bridge, as being constructed, is a serious obstacle to the free navigation of the Ohio River, and that it imperatively calls upon Congress to exercise its specially reserved right of modification.

In order to assist to a full and clear comprehension of the subject in all its phases, we have thought it proper to present a brief abstract of the course of legislation and debate upon this subject of bridging the Ohio since the introduction of the bill which in a modified form became the law approved July 14, 1862. This history is presented in the next chapter, and is made up from the debates in the Congressional Globe and the statements of Members of Congress who voted for the joint resolution.

From this it appears that the law approved July 14, 1862, providing that the largest span should be 300 feet, was only agreed to at that time by the river interest on account of the alleged impracticability of making longer spans at reasonable expense. One of the provisions of this law required that if the bridge was built without a draw it should not be less than 90 feet above lowest water, and not less than 40 feet above highest water. These prescribed elevations made this part of the law applicable to places of varying ranges between high and low water, but its operation was expressly limited to the Ohio River above the mouth of the Big Sandy. As some Members of Congress were apprehensive that the bridge if built at so great an elevation would be insecure, a provision was made that the bridge might be built at 70 feet above lowest water with a pivot draw giving two clear openings of 100 feet each. Unfortunately this alternative provision made no stipulation about the height
111 above highest water of bridges using draws, and this has since become a very serious omission in consequence of its operations having been extended so as to include Cincinnati. Seventy feet above lowest water is at least 25 feet above highest water at Steubenville, while at Cincinnati 70 feet above lowest water is but 7½ feet above highest water. The reasons for requiring the draw openings to be only 100 feet do not appear in the debates, but they were pronounced too narrow at the time by several Members.

It has been stated that the joint resolution approved March 3, 1869, was a compromise between the navigation and bridge interests; and so it undoubtedly was in regard to length of span. The navigation

interest had been striving to secure 500-foot spans instead of 300, and the compromise was on 400 feet for the main span. Representatives J. K. Moorhead, Benjamin Eggleston, and S. F. Vary, who voted for the joint resolution, state that it was with the express understanding *the* the bridge was not to be of less height than the existing suspension bridge, or not less than 40 feet above highest water. It is most unfortunate that this understanding was not made a part of the resolution itself. But the neglect of the bridge companies at Steubenville, Bellaire, and Parkersburg to build low bridges, under the act of July 14, 1862, caused this provision of this act for a low bridge to be overlooked. The provision for a high bridge under this law would have been satisfactory. These facts show that the compromise, as understood by those who made it, has not been complied with in building the bridge at Cincinnati on the drawbridge plan, and that it lacks the essential quality of a compromise in not being understood in the same sense by those who are said to have made it; and hence it cannot be made a reason for Congress refraining from exercising the reserved right to compel the modification of the bridge itself. The Government of the United States is the custodian of the public rights on these navigable streams, and though parties interested in special branches of trade may consent to certain designs of bridges, the Government alone, comprehending all interests, should be the final judge in such matters.

112 It is proper to state here, in regard to long spans of 400 feet and upward, that they are not impracticable at reasonable expense, and that when properly proportioned they are much more stable and safe than smaller spans, because their own weight is so great in proportion to the moving load that the latter changes the permanent strain but little. High piers proportionately widened and lengthened are just as firm as low ones, and the greater pressure the stone has to sustain is not one-tenth of its crushing load. Those who wish to see these points illustrated can do so by visiting Louisville and examining the bridge built at that place across the Ohio—an admirable structure that overcomes every objection that can be made against a high bridge.

A detailed description of the Newport and Cincinnati Bridge as it is "in process of erection" is given further on. From this it will be seen that the bridge is to be 71½ feet in the clear above low water and 9 feet above highest water at the main channel span. This span is 400 feet between the piers. The piers, however, are not parallel with the current, but make an angle of 12° with it. The practical effect of this want of parallelism is to reduce the width of the span to 390 feet, which is less than the law requires.

The foundations of the piers are not laid deep enough in the bed of the river and will require protection, and unless this is done with care and at considerable expense there will be a still further reduction of the channel way. Our examination was made when the river was 6 feet above the lowest stage. It is probable that the course of

the current is not materially different at other stages, and therefore we have to report that the piers are not parallel with the current as the law requires.

This angle which the piers make with the current is occasioned by the line of the bridge being taken so as to accommodate the railroad approaches from the Little Miami depot. On this account, too, there is a curve with a radius of 609 feet on the bridge over two spans of 96 feet each on the Cincinnati side. This curve compelled the use of these two short spans, where otherwise a single span would have been better.

113 The cost of the bridge was thus increased, and the flow of the river at high water was obstructed.

Under the law one of the spans, next the main span, must give a clear opening of 220 feet, and as the curve spoken of above would not allow of its being placed on the Cincinnati side, it was placed on the Newport side of the main span. Although this main span is over the deepest water, it is said that the main water flow at high water is somewhat on the Newport side of it, and it would have been better to have placed the 220-foot span on the Cincinnati side and the 400-foot span 220 feet nearer the Newport side. The position of this main span is not in violation of the law, but its location might have been so much better for navigation that this fact alone demonstrates the importance of having an officer of the Government to supervise the location of bridges.

At the draw span both of the rest piers are at right angles with the bridge and make an angle of 12° with the current. The pivot pier and its protection, however, are built parallel with the current and are not parallel with the adjoining piers. This presents a very dangerous appearance to the navigator, although the mathematical decrease in the width of the opening, measured at right angles with the current, is less than a foot. The width is about 100 feet, and it is not enough for any place on the Ohio River. On the Mississippi River all bridges built under the existing laws of the United States are required to have two draw openings of at least 160 feet each.

The piers of the Newport and Cincinnati Bridge occupy about 12½ per cent of the ordinary high-water section of the river, and probably increase the high-water velocity of the current at that rate.

For further details of the piers and approaches and their cost see the chapter on this subject. The gross cost of these, according to our estimate, is $417,151.

The description of the superstructure of the main bridge and its cost are given in a special chapter. The entire length of the

114 bridge between the shore abutments is 1,781½ feet. The bridge, as now arranged for the railroad, is a "through" bridge, giving 13 feet in the clear between the trusses. Outside of the trusses and supported by floor beams suspended from the ends of the posts are narrow wagon ways 6 feet wide with sidewalks 2½ feet wide.

The situation of these wagon ways is not good on account of the liability of horses becoming frightened at the locomotives. The

width of the bridge over all is 38½ feet. The draw span is to be turned on its pivot by machinery to be worked by men or by steam. There is one truss at present erected of 202½ feet span, which is about 27 feet in height. We have not been furnished with the height proposed for the 400-foot span. It probably can not be less than 40 feet. The superstructure is uncommonly high and wide for the width of base on which it stands, which does not conduce to its stability. The gross cost of the superstructure of the bridge over the river, according to our estimate if $375,500. This makes the total cost of the bridge, as now being constructed, $792,651.

In the foregoing we have not included the cost of land purchased. But little of this is so occupied by the bridge as not to be available for other purposes, and the increased value of the property makes this probably a source of profit rather than expense. It may be proper to increase the estimate by the interest on about one-third of the total cost for the space of one year and a half at 7 per cent, which would be about $27,743. This covers the expense of carrying the money expended on the work before it becomes productive. The bridge, when finished on present design, would then have absorbed a capital of $820,394, all told.

The effect of the bridge upon navigation is discussed in detail in a separate chapter, and it is evident from the consideration there presented that the bridge, as in process of erection, requires modification and alteration. We think the main span should be raised 28½ feet higher than it is now designed, thus giving a clear headway of
115 100 feet above lowest water, and 37½ feet above highest water. Even this headway is not quite equal to that of the suspension bridge, which is 103 feet above lowest water. We would keep the main 400-foot span as a "through bridge" and raise all the other spans so as to make them "deck bridges" for the railroad track. This will lengthen the railroad approaches so as to make them 2,350 feet long on the Newport side, and 3,050 feet long on the Cincinnati side, measuring from the abutments next to the river.

We have preserved the alignment as it was before, so that there are no rights of property to acquire, and the streets are nowhere much more obstructed than at present; while Eggleston Avenue, in Cincinnati, now closed by the existing railroad approaches is opened. We have adopted as a maximum grade for the approaches 66 feet per mile on tangents, for the reason that the railroad connecting the bridge with the Short Line Railroad to Louisville has a grade of 60 feet per mile on a 6° curve, which is considered equivalent to 69 feet per mile on a tangent. Any train that can pass over this road can cross the bridge without assistance.

As Cincinnati is a principal station where trains are made up and switch engines are constantly at hand, plenty of auxiliary power will always be available in case the bridge should hereafter be made to connect roads with easier ruling grades. Had we relied on this fact we might have recommended grades on the bridge approaches of 80 feet, or even of 116 feet per mile, and thereby have considerably

diminished the cost of construction; but to avoid getting into a discussion on this point we have taken the same ruling grade that already controls the roads connected, against which there can be no objection. The grades on the Louisville bridge, up to the channel spans, are 78 feet per mile.

On the curves of the Cincinnati approach to this bridge we have reduced the grade a foot and a half per mile for each degree of curvature. On the Newport side the approach is on a grade of only 30 feet per mile, except for 537 feet, in which it has a grade of 66 feet per mile, the lesser grade being made thus easy on account of the
116 necessity for crossing Jefferson Street at a sufficient elevation to leave there a headway of 12 feet for the street travel. A great reduction of curvature and grade could be made on the Cincinnati side by a slight change in location; but we have not done this because we wished to avoid questions of purchase of property. The company, when raising the bridge, can make such changes in this report as may be most advantageous to themselves.

According to the design upon which the bridge is building, the railroad track gets down to the grade of the Little Miami Railroad near the depot grounds. In the proposed modification the track at that point will be about 25 feet above the present one at the depot, but by building a new passenger depot, with one front of it on Pearl Street, the floor would be placed on a level with the track. The building of this depot will be supplying a want of the road, and is not properly chargeable to the bridge. It only remains to be added that we have calculated the weight which the piers will have to stand when raised, and find that it will not be one-tenth of the load required to crush the poorest stones employed in constructing them. Our estimates of the amount of money required to make the proposed change of $288,695; the details are given further on. If the change should be delayed till the 400-foot span is erected the cost would be somewhat increased. The bridge, when remodeled, will then have cost, all told, $1,109,089.

Had the high plan been adopted at first the cost of the pivot pier and all its appurtenances, the cost of part of the brickwork in the railroad approaches, the cost of the wooden trestlework between Front Street and Eggleston Avenue, which we replace with iron trestles and piers and bridge, and finally the extra cost of raising the piers and trusses from one plan to the other would have been saved. Taken all together, the amount of money in this last estimate that might have been saved is about $132,000, so that the high bridge, if built at first, would have cost $977,089.

117 It can not be claimed, however, that $1,109,089 is too much money to put in a bridge across the Ohio River. The Suspension Bridge cost more than this, and so did the bridge at Louisville. The work is progressing rapidly, and it would be safe to conclude that before any action can be had by Congress, all the substructure will be finished, and the superstructure of three or four of the minor spans erected. The 400-foot span, however, can not be finished, nor

can the draw span and the others, if erected subsequently, be raised without increased expense beyond what we have estimated for. The proper protection to the foundation of the piers, for which we have allowed in our estimate of the cost, remains to be made.

It seems called for even in the special report that we should give our opinion as to the kind of general legislation that should be had in regard to bridges across the Ohio River. The demand for these bridges is increasing and Congress, for its own protection, ought now to finally dispose of the subject in such a way that the river interests should no longer be threatened with destruction; and that bridge companies might no longer hope for special favors, but be compelled to work on a well understood and digested plan. The capabilities of engineering and the resources of the railroad corporations are ample to meet any just requirements of navigation.

It is not uncommon to hear the navigation of the Ohio disparaged; to hear repeated the false assertion that the river is dry one-half of the year and frozen up the other half; and to be told that the interest, at most, is a local one.

In another part of this report is given a condensation of the official record of the river at Cincinnati for the last twelve years, which shows the average condition of each month. From this it can be seen that for three hundred and twenty-six days in each year the river is at least 5 feet above low water; for two hundred and fifty-three days at least 10 feet above; and for one hundred and ninety-one days at least 15 feet above. This represents the condition of the river from as high up as Portsmouth, at the mouth of the Sciota River, down to Louisville.

118 On this part of the river vessels are almost constantly running that are 300 feet long, and each one carries on an average 150 tons per day, or 4,500 tons per month. This is enough to show the capacity of the river, in the space considered, without taking into acount the business of the coal and other barges moved by tugs. The statistics of commerce show the river business to be greatly increasing. The same advances which are seen in other great lines of transportation are seen here. Vessels are being built of increasing size and value, and the Government is removing great obstructions which have hitherto retarded development. One can see the growth of the Nation in contemplating our great river commerce as plainly exhibited as it is on our great inland lakes, in our coasting trade, or even in the railroad lines themselves, and no American can see it without being proud of it. The interest is anything but a local one, and while the bridge itself may be regarded as local, the principles involved in allowing it to be placed across a great navigable highway apply to every navigable stream in the country, and are worthy of the consideration of every man having a voice in the matter. We think if Congress should compel the alteration of the Newport and Cincinnati Bridge, as we recommend, and should repeal or modify the joint resolution approved April 7, 1869, authorizing a bridge at

Paducah, that this action would be acceptable to all the river interests. Then let a general law be passed that hereafter all bridges to be built across the Ohio River shall have at least one span giving a clear opening 400 feet wide, measured at right angles to the stream, as near as practicable, and that the headway under this span shall not be less than 100 feet from lowest water, nor less than 40 feet from highest water. These two requirements about the height makes the provision apply to all places. Where the river oscillates less than 60 feet between low and high water, 40 feet above high water is not enough, as it does not furnish sufficient headway for long-continued intermediate stages of the water.

119 In addition to the above requirements, all bridges below Cincinnati should have a draw span, giving a clear passageway 160 feet wide, placed so as to be available in the highest stages of the river for the use of the large packet steamers that can not at that time pass under the bridge. This may be an important provision in case of a war requiring the transportation of large numbers of troops along the river.

There is already a draw in the Louisville bridge, half of which is over the canal, that will soon be made available for the river by altering a part of the canal bank. We think it would have been advisable to have had draws in all the bridges above Cincinnati, but there are so many bridges already built there without them that it is too late to consider the subject.

It is further of the greatest importance that the law should specify some branch of the Government to supervise its execution. Special cases will arise at each locality that can hardly be foreseen and provided for in a general law. It is believed, however, that a general law can be passed that will sufficiently meet all cases without imposing any additional expense or delay upon bridge companies, if its operations be put under the direction of some Government engineer.

The bridge companies have not generally shown a desire to have the advice of the Government officers in charge of the river improvements. These officers have in no case been consulted, though their advice before commencing would have cost nothing, and would greatly have strengthened the position of the bridge company.

Where bridge interests have needlessly obstructed navigation they are without excuse, and in correcting their mistakes, there need be felt no apprehension of trespassing upon vested rights as these rights were made conditional upon not obstructing navigation.

The following documents and maps accompany this report:

The acts of Congress under which this bridge is being built.

Map showing the location of the bridge in reference to the cities of Newport and Cincinnati, with recorded current observa-
120 tions and soundings. Also, on the same sheet, a map of eight miles of the river, showing its curvature above and below Cincinnati.

Four photographs of the bridge taken on the 26th and 27th of November showing its condition at that time.

HISTORY OF THE LAWS UNDER WHICH THE NEWPORT AND CINCINNATI BRIDGE IS BEING BUILT.

This bridge has been designed under the law approved July 14, 1862, authorizing the building of bridges over the Ohio River, above the mouth of the Big Sandy River, modified by the joint resolution approved March 3, 1869, and under the alternative that permits of a bridge being built here with a span of 400 feet over the main navigable channel, with one of the adjoining spans, giving a clear opening of 220 feet at a height of 70 feet above low water, provided a draw is made at an accessible and navigable point, giving two clear openings of 100 feet each; and provided that the piers are parallel with the stream as near as practicable. There is no reason given in the debates in Congress for adopting this height of 70 feet above low water, nor for the width of draw of 100 feet. The chief river interests that opposed the original bill for erecting the Steubenville Bridge, which proposed only spans of 200 feet, were those of the coal boats and rafts; but Mr. Willey, United States Senator from Virginia, and Mr. Wilkinson, United States Senator from Minnesota, protested then that the draw was inadequate for steamboats. The raft and coal-boat interests were most earnest in demanding a wide channel span, but finally consented, through Senator Cowan, to a span of 300 feet. In the bill as finally passed, the bridge builders were allowed the option of building without a draw, provided that they raised the bottom chord of the 300-foot span to 90 feet above low water, and to 40 feet above high water, which thus made the law for the high bridge accommodate places where the range from high to low water differed from that at Steubenville. But singularly enough, there was no such provision with regard to the alternative of the drawbridge plan. On the latter plan the bridge was re-
121 quired to be but 70 feet above low water, but no provision was made in regard to the height above high water. The river rises at Steubenville, from low water to highest water, 45 feet; consequently the drawbridge plan, if adopted there, would have been 25 feet above high water. The rise from low to highest water at Cincinnati is 62½ feet, so that the bridge which is there 71½ feet above low water, is only 9 feet above the highest water, which is barely enough for its own safety. The fact that the original act was limited to the Ohio River above the Big Sandy, shows that its enactors never contemplated its being applied to points below. The debates in full will be found in parts three and four of the Congressional Globe, second session of the Thirty-seventh Congress, pages 2230, 2247, 2419, 2539, 2850, 3050, 3111, 3112, 3113, 3114, 3115, 3195, 3197, 3216.

The Steubenville Bridge Company accepted the alternative in the law which required the bridge, if without a draw, to be 90 feet above low water. This settled the long-contested point of ability to build railroad bridges with 300-foot spans. Incidentally, it may be here said of this bridge, that it violates the requirements of the law in not

having its piers parallel with the current, as near as practicable; and, moreover, the defective foundations have compelled the use of riprap around the piers so as to occupy about 40 feet of the space the law required to be left unobstructed. (See Report of Senate Committee on Post Offices and Post Roads, No. 168, second session Fortieth Congress, pages 5, 11, and 12.)

The bridging of the Ohio River was again introduced into Congress by House bill No. 384, second session Fortieth Congress. (Congressional Globe, page 473.) A substitute to it was passed through the House February 27, 1868, after considerable debate. (See pages 1471, 1472, 1473.) This substitute authorized the building of a bridge at Paducah, under the provisions of the act approved July 25, 1866, for bridging the Mississippi River. On the same day the House passed House bill No. 725. (See Congressional Globe, page 1473.) The bill as first introduced extended the privileges of the act approved
122 July 14, 1862, down as far as the mouth of the Licking River, so as to include the Newport and Cincinnati Bridge; but, as finally passed, it was so amended that the bridge was required, if a high bridge, to be not less than 50 feet from the bottom chord to the level of high water, with a clear span of 250 feet, and if a low bridge, it was to have a pivot draw, giving two clear openings of 160 feet each, so that its provisions were nearly the same as the bill for the bridge at Paducah, and for that at Quincey, Illinois, and at other points on the Mississippi.

On the 22d of June, 1868, Mr. G. B. Raum, Member from Illinois, introduced a joint resolution, No. 305 (see Globe, page 3364), providing that hereafter all bridges building or to be built over the Ohio should have one span giving an unobstructed width of 500 feet, and that the bottom chord should not be less than 50 feet above high water. This came up again in the order of business on July 6 (Globe, page 3760), and was amended so as not to apply to the bridge at Louisville. In this shape it passed the House.

House bill No. 384 was referred to Senate Committee on Post Offices and Post Roads, March 4, 1868 (Globe, page 1658), reported back with amendment, page 1863; motion made by Mr. Norton to recommit, page 2509; discussed, pages 2545, 2546, 2547, 2548; recommitted, page 2548; reconsidered and discussed, pages 2556, 2557, 2558, 2559. Many interesting facts relating to navigation, especially in regard to the size of barges, coal-tows, &c., were produced in these last discussions. House bill, No. 384, also No. 725, and several memorials on the subject of bridging the Ohio, were referred to the Committee on Post Offices and Post Roads in the Senate. This Senate committee on May 25 (Congressional Globe, page 2159) made their report (Globe, page 4093) on the 16th of July, 1868. It is No. 168, second session Fortieth Congress. It was accompanied by a general bill, No. 622, for bridging the Ohio River. This bill at first did not fix the width of greatest span required. It was recommitted July
17 (Globe, page 4145), and reported back on the same day
123 (Globe, page 4146). As finally reported by the committee,

it required one span, giving a headway of 40 feet above high water, and 500 feet clear width of passageway.

The committee report, No. 168, is quite full upon the subject of bridging the Ohio, and presents all the main features of the case. It makes an unimportant error in stating on page 2 that the object of House bill No. 725 was to extend the provisions of the act of July 14, 1862, down to the mouth of the Licking River. This was the effect of the bill as it was introduced, but as passed in the House it was so amended as to make the provisions of the bill for bridging the Mississippi, approved July 25, 1866, applicable to the Ohio between the mouths of the Big Sandy and Licking Rivers.

The debates on the Senate bill No. 622, as finally reported by the Committee on Post Offices and Post Roads, are found in the Congressional Globe, second session Fortieth Congress, pages 4199, 4200, 4201, 4203, 4204, 4267, 4268, 4269, 4283, 4284, 4285, 4286, 4287, 4289, 4290, 4291, 4292.

The result of the debate in the Senate was to pass a substitute for the bill as first reported by the committee, which directed that the President should appoint a board of scientific engineers, not more than seven nor less than five in number, who should report to the next session of Congress the proper width of spans in railroad bridges across the Ohio River, that they might be adapted to the wants of navigation on that river, and that, until Congress should by law take action upon said report, no bridge should be constructed over said river, &c. But this provision was not to apply to the bridge in process of construction over the Ohio at Louisville.

On July 25 Mr. Hendricks submitted to the Senate another resolution to appoint a board of three engineers to make a survey of the Ohio River where bridges were projected, and to report what length of span was necessary to meet the requirements of navigation and of the public interest. (Globe, page 4462.) No action was taken on this resolution.

124 Senate bill No. 622 was received in the House July 22 (Globe, page 4334), but no action was taken upon it during this session.

In the third session of the Fortieth Congress, Senate bill No. 622 came up in the House on the 10th of December and was referred to the Committee on Roads and Canals. Considerable debate attended this action. (See Globe, third session Fortieth Congress, pages 49, 50, 51, 52, 53, 54, 55.) On December 14, 1868, the House passed a resolution authorizing the committee to examine, under oath, skilled and scientific witnesses. (See Globe, page 75.) On March 1 Mr. Cook, of Illinois, introduced House bill No. 2014, which, in substance, was the same as Senate bill No. 622 in its modified form, and it was passed. (See Globe, page 1742.) It was referred in the Senate to the Committee on Commerce. (See page 1715.) No further action was taken upon either Senate bill No. 622 nor upon House bill No. 2014, and thus was presented the singular spectacle of bills for the

same object being passed in each House under different titles, and in both cases perishing in the committee rooms.

In the third session of the Fortieth Congress (Congressional Globe, page 1028), February 9, Mr. Sherman introduced joint resolution No. 219, giving assent to the construction of the Newport and Cincinnati Bridge. At the same time Mr. Morton introduced a joint resolution (Senate Report No. 220), to prevent the building of any bridges over the Ohio with a central span of less than 400 feet. Both resolutions were referred to the Committee on Post Offices and Post Roads. On February 11 joint resolution No. 219 was reported, amended so as to require a span of 400 feet, and it was stated to be satisfactory to all parties. Mr. Morton added an amendment reserving the right to direct the necessary modifications and alterations of said bridge. The Senate then passed it. (Congressional Globe, page 1068.)

On March 2 the resolution was called up by unanimous consent by Mr. Cary and passed without debate. (Globe, page 1809.) It is No. 21 of the joint resolutions which passed Congress at that session.

125 It is claimed by those interested in the navigation of the Ohio River, and also by Representatives Moorhead, Eggleston, and Cary, who voted for the bill giving assent to the construction of the Newport and Cincinnati Bridge, and to whom was specially intrusted the duty of preserving the free navigation of the Ohio River, that it was mutually agreed by all the parties in interest that the bridge should be as high as the Covington and Cincinnati Suspension Bridge, viz, 103 feet above low water. As the bridge companies at Steubenville, Bellaire, and Parkersburg all decided to build high and not draw bridges, although they had the option to do either, the public came to regard that part of the law of July 14, 1862, as a dead letter; and even when revived and extended to Cincinnati, where it is yet more inapplicable, they did not dream that in the face of direct assertions to the contrary the bridge company would adopt so objectionable an alternative.

The following statements from Representatives Moorhead, Eggleston, and Cary are made part of this history, as also the statement of the committee of the Pittsburg City Councils and Coal Exchange, who went to see the authorities of the Pennsylvania Central Railroad Company, in Philadelphia, to remonstrate against the manner in which this bridge was being built. The latter document shows that the constructors of the bridge acknowledge that the matter of raising it presents no engineering difficulties but is merely a question of cost.

STATEMENT OF HON. JAMES K. MOORHEAD.

I, James K. Moorhead, of Pittsburg, Pennsylvania, do state that I was a Member of the Fortieth Congress from the twenty-second congressional district, Pennsylvania, and took a deep interest in the question of bridging the Ohio River; that the citizens of Pittsburg and others interested in the navigation of said river did at different

times send committees to Washington to represent the importance of maintaining the navigation of said river unimpaired and prevent obstruction to it by bridging the same; that during the winter of 1868–69 such committee was there, composed of R. C. Gray,
126 Joseph Walton, J. A. Blackmore, William H. Brown, and W. Milnor Roberts, with whom I had frequent conferences on the subject, and I have read a statement, dated Pittsburg, November 4, 1870, signed by the four first-named persons, which statement I attach hereto:

"PITTSBURG, *November 4, 1870.*

"We, the undersigned, hereby certify that we were a committee representing the river interests at Washington during the session of Congress, 1868, and that our business there was to urge upon Congress the necessity for the passage of a general law for the bridging of the Ohio River in such manner as to leave the navigation of the river safe and unobstructed. We claim that all bridges should have a main span over the channel of 500 feet in length and height of 40 feet above extreme high water. At that time we were aware of the fact that two bridges, one at Bellaire and one at Parkersburg, were in course of construction, and that these two bridges were to have main spans of only 300 feet (since made 350 feet.—Ed.), and elevation of 90 feet above low water. The Baltimore and Ohio Railroad Company had representatives advocating these bridges. We met the late Judge Headington, of Cincinnati, who was there representing the Newport and Cincinnati Bridge Company, and he promised to us on behalf of that company that he would agree to make that bridge 400-foot span and as high over the channel as the Cincinnati Suspension Bridge, and that if we would assent to this we should have his influence and the influence of his company to aid us in having a general law passed to this effect. We were also to secure the influence of such Members of Congress as we could control in favor of the passage of this law. Upon Judge Headington's repeated and solemn assurances we called upon General J. K. Moorhead, the Member from this district, and requested him to make no objection to the bill aforesaid. We did this only on the solemn promise of Judge Headington that the Newport Bridge would be built with a 400-foot span and as high as the suspension bridge, and that the piers would be so located as to leave the navigation safe.
127 • Until recently we were of the opinion and belief that this bridge was being built according to this agreement and understanding with Judge Headington. And we further state that the ridiculous proposition of a draw 100 feet in width was never mentioned or referred to by Judge Headington or anyone else.

"RICHARD C. GRAY,
"JOSEPH WALTON,
"WM. H. BROWN,
"J. A. BLACKMORE."

That I believe the same to be correct and true, and recollect distinctly of one or more of said committee informing me that they had

compromised with the bridge company upon a span of 400 feet in length across the main channel, and in other respects satisfactory to them; and they desired me to make no opposition to the resolution when it reached the House. But before the bill was called up in the House by General Cary I learned that the act of July 14, 1862, was made applicable to it, and as this act permitted the alternative of a draw, and knowing, as I did, that a bridge constructed with a draw, and in other respects in compliance with that provision of the act, would be destructive to the interests of my constituents who were engaged in navigating the river, I determined to oppose it unless that part permitting a draw was stricken out. I made this known to General Cary, who assured me there was no intention of constructing the bridge with a draw; that the reference to the act of 1862 was to define the height, and to give me assurance of this he introduced me to a gentleman who represented the interests of the bridge company, Judge Headington, I believe it was, who assented fully to what General Cary had stated. I had no idea after that that a draw was contemplated by any person until I learned a few weeks since that one was actually being constructed.

Upon the assurances given me I permitted the joint resolution to pass. It was called up on the 2d of March, 1869 (one day before the close of the Fortieth Congress). An objection or amendment offered at that time would have been fatal.

128 In further testimony as to the compromise made between the representatives of the bridge company and the committee from Pittsburg before referred to, I have a letter from Colonel W. Milnor Roberts, dated St. Louis, November 1, 1870, informing me that he was one of the committee who made the compromise; that they agreed to admit a span of 400 feet instead of 500; and were to have the aid and support of the bridge company or railroad men in establishing 400 feet as the minimum for the channel span of all other Ohio River bridges. That nothing was said about a draw; they all understood that it was to be the full height by the law for a bridge of continuous span.

J. K. MOORHEAD.

PITTSBURG, *November 19, 1870.*

STATEMENT OF HON. BENJAMIN EGGLESTON.

I, Benjamin Eggleston, do state that I was a member of the Fortieth Congress, and took a deep interest in the question of bridging the Ohio River at and before the resolution of consent of Congress to the building the Cincinnati and Newport Bridge; that I met Judge Headington there, who was representing the bridge company, and learned from him that a compromise had been effected satisfactory to the river interest, and it had been agreed that the bridge should be built as high as the suspension bridge at Cincinnati, with a span 400 feet long over the main channel. At his request I introduced him to the proper committee of the House, who were requested

to report by him in favor of such a compromise. I further state that except for such statement of Judge Headington and the belief in such compromise no such resolution of consent could have been reported or passed. He further says that he has read over the statement of James K. Moorhead, to which this is attached, and the statement of Richard C. Gray and others, referred to therein, and he believes that these statements are true; and that the river interest yielded 100 feet in the length of the span over the main channel in consideration of the agreement that the bridge should be built
129 as high as the suspension bridge at Cincinnati.

BENJ. EGGLESTON.

STATEMENT OF HON. S. F. CARY.

I, Samuel F. Cary, of Hamilton County, Ohio, state that I was a member of the Fortieth Congress from the Second Congressional District of Ohio; that I felt a deep interest in the subject of bridging the Ohio River; that I was an advocate of a 500-foot span and nothing less. I further say that I was not induced to yield my opposition to the proposed bridge between Cincinnati and Newport until I was assured by Judge Headington, representing the bridge interest, and by those representing the river interests, and by telegrams shown me from Cincinnati Chamber of Commerce (or officers thereof), that a span of 400 feet across the channel would be satisfactory to all interests, provided the bridge was as high as the Covington suspension bridge. It was late in the session, and I feared that the result of non-action by Congress might be attended with serious injury to the river interests, and I supported the resolution. But for the distinct understanding that the bridge was to be as high as the Covington suspension bridge, and that the resolution was satisfactory to all concerned, I do not believe the resolution could have been passed, and I certainly would not have supported it. I have read the statement signed by the Hon. J. K. Moorhead, and the paper of Richard C. Gray, and others therein referred to, and say that according to my recollection they are substantially correct. I further say that the resolution of consent was reported upon the faith of the compromise being thus affected, by which the bridge was to be as high as the suspension bridge, and of the pledge of the bridge company represented, as I understood, by Judge Headington, that the bridge should be so built.

S. F. CARY.

CINCINNATI, *December 3, 1870.*

130 STATEMENT OF COMMITTEE OF PITTSBURG COUNSCILS AND COAL EXCHANGE.

We, the undersigned committee, appointed by the joint committee of the city councils and coal exchange, of the city of Pittsburg, to confer with Colonel T. A. Scott, vice president of the Pennsylvania Cen-

tral Railroad Company, in relation to the Cincinnati and Newport Bridge, would beg leave to report that they met Colonel Scott and asked *if* him if the bridge could not be raised to the height 100 feet above the low water mark, or to 40 feet above high water mark. Colonel Scott said that he could not answer that question himself, but would call in Mr. Roberts, engineer, who was also vice-president of the company. Mr. Roberts, after some hesitation, said it could; that the method would be to raise the piers 6 feet higher, and to make the roadway over the top of the truss, instead of the bottom, and raise the piers of the channel span to the full height of the truss work of the other spans, and construct the trusswork of the channel span so that the road would be on the bottom chord, and thereby connect with the road running over the top of the truss work of the other spans; but this change would cost considerable more money. Colonel Scott said the change could be made, but how would the means be raised? The committee stated that they did not come prepared to make propositions, but wished to hear from the Pennsylvania Central Railroad Company. Colonel Scott said if the city of Cincinnati would subscribe*r* to the stock of the bridge, and issue city bonds for the amount necessary to make the change, the Pennsylvania Central Railroad Company would take the bonds and furnish the money. One of the committee suggested the method of raising the money required, by the bridge company issuing the bonds the same as they gave the Pennsylvania Central Railroad Company. Colonel Scott objected. It was then suggested that they issue second mortgage bonds. Colonel Scott stated that the only acceptable was to raise the money would be by subscription to the stock of the bridge company.

In answer to the question, how would the river crafts pass
131 under the bridge in the high water? Colonel Scott said he had no doubt that the coalmen would find means to pass through; said he would guarantee that if his friend, Captain Bigley, had a tow of coal above the bridge in high water, he would manage to get it through.

In answer to the question, what object had they in view for working night and day, also on Sunday, Colonel Scott stated it was to get the piers above water; that they were doing nothing that would not be required for a higher bridge. Colonel Scott treated the committee very kindly and showed a disposition to do all in his power to remove the present objections to the bridge, provided the means could be raised to make the changes without expense to the Pennsylvania Central Railroad Company, and also stated that they would take up the matter at once, and make the estimate of the additional cost, and correspond without delay with the committee.

SIMPSON HORNER.
N. J. BIGLEY.
CHAS. A. DRAVO.
HILL BURGWIN.

OCTOBER 27, 1870.

RIPTION OF THE SUPERSTRUCTURE OF THE NEWPORT AND CINCINNATI IDGE AND APPROACHES; EFFECTS UPON THE CURRENTS OF THE RIVER; ARACTER OF THE WORK AND ESTIMATE OF ITS COST.

the location of the 400-foot span is the controlling feature in tructure, so far as navigation is concerned, we will begin with d refer to other governing features as they arise in the progress escription, premising that the position of the bridge itself was mined by the desire to make the least expensive location for ecting two railroads on opposite sides of the river. On the ings of the bridge company the piers are numbered from the shore, so that Pier No. 1 is next to the a butment on the Cincinnati side, and the others are numbered regularly across to the Newport side. In describing them we will use the same numbers.

e pier on the Cincinnati side of the main channel (Pier No. 3) ts center line about 50 feet south of the low-water line, and in pth of 2½ feet at low water. The pier on the Newport side of the nel (Pier No. 4) has its center line 418 feet from that of Pier in 3½ feet at low water and about 310 feet from the low-water on the Newport side.

is location of the 400-foot span leaves the main low-water chanetween them with a depth at low water of about 6 feet. No al examinations were made by the bridge engineers to ascertain depths to solid rock at different points and the pier locations made without regard to it, though we have reason to believe Piers 4, 5, and 6 have their foundations within 2 feet of the rock. The tops of the channel piers are finished with three es of cut stone, each projecting a little from the course below, he three courses together being 4 feet thick. The upper surface, h receives the end posts of the trusses, is 73 feet above low water. batter of the piers begins below the three top courses, where the are 10 feet wide and 69 feet above low water, and extends down thin 6 inches of low water. This batter or slope of the sides is ame for all the piers and is 24 upon 1. At the foot of each pier, hes above low water, there is an offset of 6 inches on each side a course of stone 1¾ feet thick; then another offset of 6 inches nother course of stone 1¾ feet thickness; then another offset of hes and a course of stone 1¾ feet thick; and finally a timber ge of three courses of poplar timber, each one foot thick, prog 1½ feet beyond the masonry. In no case does this timber lations rest upon the rock.

e width of these piers, 6 inches below the low-water line, is fore 17¾ feet. The direction of the axis of the bridge, along the span of the trusses is measured, is not, during any stage at which we have measurements, at right angles with the river current, and consequently the piers, which are at right angles

to the axis of the bridge, are not parallel with the current of the river. The line of direction of the current does not materially vary from low water up to a stage of 10 feet above low water, and during these stages the piers are 12° out of the line prescribed by law.

The length up and down stream of the channel piers at their bases is about 58 feet, and therefore their want of parallelism with the current contracts the water-way space between them by 10 feet, leaving a practicable opening of about 390 feet.

The foundations of the channel piers are very defective. The bottoms of the wooden platforms are between 4½ and 5 feet below low water, while the depth at low water between these piers is 6 feet now; and probably, owing to the contraction of the water-way, this depth will be much increased by the scour of high water. These foundations are therefore apparently insecure. At present they are somewhat protected by ripraps and by the coffer-dams used in their construction, which have not yet been removed. To secure them it will probably be necessary to greatly increase the riprap. These foundations are similar to those at the Steubenville Bridge, where the riprap occupies at least 40 feet of the channel-way between the piers. Such a protection here (and it would be unsafe to make a less effective one) would reduce the space between the channel piers available for navigation by not less than 40 feet, except at stages of the river high enough to submerge the riprap several feet. It is possible, however, to protect these piers without materially obstructing the navigable channel, but it would be somewhat expensive.

The want of parallelism of the piers with the current arises from the Cincinnati end of the bridge being thrown above the Newport end to facilitate connection with the Little Miami Railroad. The law says "the piers of said bridge shall be parallel with the current of the river as near as practicable." Some persons have contended
that this meant as near as practicable to suit the approaches
134 to the bridge; but obviously this can not be the case. The
opening designated was for the benefit of the navigation of the river, and to admit any impracticability in the approaches as governing the case might operate almost indefinitely to the detriment of navigation. We can imagine a case of a bridge crossing so obliquely as to reduce by one-half the space practicable for navigation. If the site selected for the bridge be such that it really is impracticable to make the bridge at right angles to the current, it is obviously the duty of the company either to lengthen their spans so as to secure the navigable width that the law requires, as was done in the case of the Keokuk Bridge, or else to select some site where they can comply with the law. There was no absolute necessity of this bridge crossing at Saratoga Street, as better sites could have been found higher up the river. The company selected this site on account of certain supposed pecuniary advantages, and if these advantages are greater than the extra cost of complying with the law they should not complain at having to do so. If they are not, they should go elsewhere to build their bridge.

The plain meaning of "parallel as near as practicable" is this: he current almost everywhere in the river has different directions at ifferent stages; it is thus impracticable to build piers that shall lways be parallel with the channel. Such a location for the piers ust be made as is parallel to the average of the directions of the rrent at all stages, or parallel to the current at that stage of the ver when such condition is most important to navigation. If the ariation in direction is great, the bridge should be built somewhere se. The effect of this obliquity of the piers of the channel span is make the current set upon the one on the Newport side, and owing the shape of the bend in the river above the bridge this increases the river rises. At low water this span is undoubtedly over the ain flowage of the river; but from half to full stage at least half the flow must be on the Newport side of it. The navigation interest, therefore, complain, and with reason, that the Newport channel pier is practically the main navigable channel.

Before discussing the height of the channel span it is best to finish with the locations and directions of the other piers continuing ward the Newport side.

From the center line of the Newport channel pier to the center line the next pier on that side (No. 5) is 237 feet, leaving a clear span 220 feet, and then comes the draw span. Some of the river men ink that the draw span would have been better next to the channel an, but the law approved July 11, 1862, provided that "one of the xt adjoining spans shall not be less than 220 feet in length," and as was inconvenient with the location given the channel span to make 220-foot span next to it on the Cincinnati side, as will be seen when describe that side of the bridge, the 220-foot span was placed on e Newport side and the draw span pushed that much farther toward at side.

Pier No. 5 is parallel to Pier No. 4, makes the same angle with the rrent, has the same defective foundations, requiring riprap, and ffers from it only in being 2 feet narrower on top and in being made rest pier for the end of the draw when not open.

The drawbridge differs materially from any constructed on the stern waters with which we are acquainted, and it is impossible to scribe it in a few words. The law requires that it shall be conructed "with spans of not less than 100 feet in length on each side the central or pivot pier of the draw."

It was designed at first to make it exactly so, but this span was ineased one foot each side of the pivot pier from the following cause: oth of the rest piers were commenced before the pivot pier. In aking the foundations for the second rest pier the cofferdam settled mewhat farther from the one first built than was intended. The vot pier No. 6 was therefore placed midway between these two ers, and therefore the span on each side of the pivot was somewhat increased. As built, the center lines of the two rest piers, No. 5 and No. 7, are 260 feet apart, or 130 feet from the center of the pivot itself. The rest pier, No. 7, on the Newport side of

the pivot, is built like pier No. 5, already described, and parallel with it, making the same angle, 12°, with the current. The distance between these two piers at the low-water line is 260 feet, diminished by 16⅔ feet, or 243⅓ feet. The pivot pier has a circular horizontal section 42¼ feet in diameter at low water, so that the space left at each side of it is 100½ feet at the low-water line. Like the others, it rests upon a timber grillage, and like them also it will require riprap protection.

The protection pier or pivot guard placed above the pivot to protect it from ice and to make a rest for the draw when open for navigation is not placed so as to form a long pier at right angles to the bridge with sides parallel to the other piers, but is placed parallel to the present direction of the current. The consequence is that the upper end of the rest pier on the Cincinnati side of the draw projects into the draw space about 7 inches, and the lower end of the pier on the Newport side of the draw projects 5 inches. This not only diminishes the space but it presents to the navigator a very ugly and dangerous appearance. The end of the protection pier is placed about 185 feet above the pivot and consists of a sawed-timber crib filled with stone. It does not extend to the pivot but stops 118 feet from it, where it forms a rest for the draw when open. The space between this protection pier and the pivot proper is occupied by a crib filled with stone up to 10 feet above low water, and above this by a float made of framed timber which rises when the water reaches it, and is guided and kept in place by projections on the pivot and protection piers. It is designed to direct boats and floating objects through the open space and to prevent them from striking the end of the drawbridge when open. At low water there is no water in the Newport draw space and but little in half of the other. No design has yet been made for a rest and protection pier below the pivot. All the drawbridges built on the Misisippi have them, and they seem essential to the security of the bridge.

137 Pier No. 8 is 8 feet wide on top, and its center line is 202½ feet from that of No. 7. It stands on the river bank, and has the same kind of timber foundation, placed in an excavation of 15 feet, the bottom being at the level of low water, at which depth compact gravel was found.

Pier No. 9 is 7 feet wide on top, and has its center line 202½ feet from that of No. 8. Its foundation consists of 2 feet of concrete, resting on sand, about 16 feet below the natural surface and 27½ feet above the low water line.

The Newport abutment is so placed that the space between it and Pier No. 9 is 125¾ feet, which brings it on Saratoga Street, south of the river bank. The truss from this abutment to the pier is 132 feet long, and crosses Front Street of Newport. The descent toward Newport of the wagon road begins at Pier No. 9 along the bottom chord of the span connecting it with the Newport abutment, and thence on brick arches on a grade of 5,637 to 100, reaching the level

of Saratoga Street at Market Street, about 180 feet from the abutment.

The railroad descent on the Newport side, which has a grade of 0.2393 to 100, also commences at Pier No. 9 and continues beyond the abutment, over brick arches, turning about 1° to the right at Taylor Street, in order to keep along Saratoga. Market Street is crossed by a bridge at Southgate Street, about 750 feet from the abutment. No street of Newport is stopped by the approaches for either the wagon road or the railroad.

We will now complete the description of the substructure by returning to the Cincinnati side of the channel span. The channel pier on that side, Pier No. 3, has already been described.

Pier No. 2 has its center line 137.4 feet from that of Pier No. 3. The reason for making this span so short was in order to begin a curve near this pier for the railroad connection with the present Little Miami Depot. Long spans on a curve was very objectionable, and hence, as mentioned before, the 220-foot opening was placed on the Newport side of the channel span. This span, how-
138 ever, could have been made 237 feet without changing the curvature, by placing the channel pier 100 feet farther from the Cincinnati shore; *nit* this would have required the Cincinnati channel pier to have been built in water 3½ feet deeper. It would, however, have made the channel span much better for navigation. Had Pier No. 2 been placed 100 feet nearer the Cincinnati side, the curvature of the railroad connection would have exceeded 10° if the line itself remained unchanged. The curvature is already as great as is allowable. Pier No. 2 has the same grillage foundation as the others, resting on compact gravel at about the level of low water and excavated about 12 feet below the present natural surface. It is 8 feet wide on top, and has the batter of 24 upon 1. The wagon-road approach begins to descend from this pier along the bottom chord of the next span.

Pier No. 1 has the middle point of its center line 96¼ feet from the corresponding point of Pier No. 2, but its center line, being a radius of the curve of the railroad connection, makes an angle of 4° with No. 2 and consequently of 16° with the course of the current. Its foundations are at the level of low water and consist of a wooden grillage, 3 feet thick, resting on compact gravel 25 feet below the present surface of the ground. The pier is 5¾ feet wide on top and 5 feet lower than the others, owing to the descent of the bottom chord of the trusses, in order to accommodate the wagon-road approach.

The Cincinnati abutment is the same distance from Pier No. 1 that the latter is from No. 2. It is so far back on the levee that it will not obstruct the flow of any high water not already stopped by buildings. The wagon-road approaches continue to descend from the bridge at the rate of 5.637 to 100, reaching the city grade at Front Street, 175 feet from the abutment. The railway continues for 100

feet on a curve, with 609 feet radius, supported by two brick arches rising between the two wagon-way approaches; then comes a span
100 feet, built on this same curve, under which the two wagon-
139 ways approaches unite. The curve continuing, the railroad now crosses Front Street by a bridge of 100-foot span, and about 14 feet in height above the street. The grade of the railroad has been descending from Pier No. 2 at the rate of 0.435 foot per 100, on a curve of 609 feet radius. The grade now changes to 0.8 to 100, on a radius of 573, which continues for 450 feet. At the point where this change in grade and curvature takes place, wooden trestles begin.

The railroad grade continues to descend at 0.8 per 100 on a tangent, crossing Eggleston Avenue and Kilgour Street until the level of the track at the Little Miami freight depot is reached. Eggleston Avenue is completely blocked up, as the railroad grade is only from 8 to 9 feet above the grade of the avenue, and consequently there is not sufficient headroom for a bridge. At the crossing of Kilgour Street the surface of the latter was raised 4 feet.

The effect of the piers in contracting the waterways is as follows: The entire area of the natural river section at the stage 6 feet above low water, the stage at which we observed, is 10,875 square feet. The piers as they now are, with the piling around them, occupy 4,100 square feet, leaving 6,775 square feet of waterway. The mean velocity at that time is about 2,594 feet per second, and the discharge about 30,240 cubic feet per second. At this stage only piers Nos. 3, 4, 5, 6, and 7 stand in the water. At dead low water only piers Nos. 3, 4, 5, and 6 are in the waterway, and they then obstruct an area of only 1,308 square feet, so that the effect is then inconsiderable.

The highest water observed in a period of twelve years, during which we have a continuous record, is 57¼ feet above low water. During this period the water has five times been up to or above a stage of 55 feet above low water.

The area of the natural section at the stage 55 feet above low water is 79,880 square feet, and about 980 square feet of this is obstructed by a wall just above the bridge, built by the ironworks of
Gaylord & Co., Newport. The portion of this section occupied
140 by the pier and the piling around them at this stage is 9,788 square feet, equal to 12.4 per cent of the whole. Should the bed of the river hold firm these obstructions would cause an increase of the mean velocity at high water of 12.4 per cent; or if we suppose the maximum velocity at this stage of water to have been 6 miles an hour, it will now become 6¾ miles per hour. Judging from experience elsewhere this increased velocity will, in all probability, so increase the scour as to restore the section to its former area if the bed be not protected by riprap, and will so endanger the present foundations as to render extensive protecting riprap work around their bases a permanent necessity.

The greatest flood ever noted at this place was that of 1832, when the river rose 62½ feet above low water. At that date the natural

channel had not been interfered with to any extent. It is difficult to estimate what would be the effect of such a flood with the bridge built as now designed, with the river narrowed as it has been by encroachments immediately above. The permanency of the bridge under such a visitation is questionable. The piers are all finished at the top with three courses of cut stone, each course about one foot thick, and each projecting slightly from the course of stone below it. At the distance of 23 feet from the top there is a band of cut stone 15 inches thick projecting 5 inches. The stone between this band and the three topmost courses is a sandstone sustaining a crushing weight of 11,137 pounds per square inch. The same stone is used as backing to the courses below the projecting band, but all the outside stones below this band are limestone, a material superior to the other in resistance to pressure and wear. The masonry is all laid as range work, in courses from 15 inches to 2 feet thick. The batter is generally 24 upon 1, the stone preserving its quarry face except at the upper starlings, which are dressed off smooth. Piers Nos. 3 and 4 are 10 feet wide and 25½ feet long on top. Piers Nos. 2, 5, 7, and 8 are 8 feet wide and 21½ feet long on top. All these other piers are rectangular on top and the horizontal section continues of this shape
141 down to the projecting band 23 feet from the top, where the starlings are reached.

The down-stream starlings have semi-circular horizontal sections and so has the up-stream starling of Pier No. 1. All the other up-stream starlings are composed of two plane faces, meeting so that the angle of the horizontal section is 67½°, and the angle of the line of intersection of these faces, or the cutwater, has a slope of about 4 upon 1. Pier No. 1 differs from the foregoing in having its top 5 feet lower, and in being on top but 5¾ feet wide and 21½ feet long.

The pivot pier is circular, and built of the same kind of masonry as the others. Its diameter on top is 36 feet, but it is 6 feet lower than the others, to leave room for the drum and turning arrangements. It is not solid, but four openings or wells were left in order to save masonry. There is no protection pier or other work below it. The protection pier or pivot guard above it is a crib of sawed timber filled with stone. It is placed just near enough to the pivot pier to support the end of the draw when open, and the space between them is occupied by a framed timber-float rising and falling with the river, and serving as a guide to passing boats and floating objects, so as to keep them from hitting the pivot or bridge. The cutwater of this protection pier is formed in the same shape as the up-stream starlings of the other piers. The wooden nose is to be protected with iron. The protection pier at the bottom extends 187 feet above the center line of the bridge. It is an inferior kind of a structure, and, being of wood, will not be as permanent as such work should be.

The foundation of Pier No. 9 rests on two feet of concrete, which is laid on sand. All the other foundations consist of three courses of timber of one foot each in thickness.

We have received the following account of the work of laying these foundations:

The pier foundations were commenced in August, 1869, and Piers Nos. 1, 2, and 7 were put in before the close of the season. These were out of the water, and only required simple excavations.

142 During the same time the coffer-dam at No. 5 was commenced. This was a double frame, filled with puddling. Work was continued on the coffer-dam until high water stopped operations. In the spring of 1870, the programme was changed, and the coffer-dams used were constructed of sheet piling 4 inches thick, put down in single rows and calked, the lower ends of the piles being shod with iron. They were put in place, and puddling of mud, &c., piled about the foot, on the outside to a height of about 10 feet, with the natural slope. This was found not to accomplish the object of keeping out the water, until the entire bottom, on all sides, for a distance of 75 feet, was covered to a depth of 3 feet with clay, and an embankment of clay was built up on the outside to the surface of the water. The work of excavation was carried down through the gravel bottom of the river to the rock in place of Pier No. 3, and to heavy limestone boulders, supposed to rest on the rock at other piers. It was found impossible to excavate to the rock in place by the method pursued. Pier No. 3 was put in while the water was 9 feet above the zero of the water works. Piers Nos. 5 and 6 are thought to be within 3 feet of the rock. It is thought that a much cheaper and better method of building these piers would have been to dredge out the place for the foundation, and to lay the masonry in caissons.

A permanent protection to the foundations remains to be made. The space around each pier should be covered with riprap for a width of 40 feet, under no circumstances coming higher than 3 feet below low water. No stone should be used of less size than two perches, or 50 cubic feet, and they should be laid in contact and well fastened together.

The material in the bed of the river, in the order in which it is met, is one foot of coarse sand with small boulders, two feet of coarse gravel, and then flat stones that seem to have once been in motion along the bed of the rock beneath.

The brick-work of the approaches is of medium quality, trimmed in part with stone. The foundations of the arches in some

143 cases seem to have yielded, causing cracks. Some of the bricks will be submerged in high water, a test to which its quality does not well adapt it.

The wooden trestlework of the railroad approach on the Cincinnati side is of the ordinary kind and is temporary in its character.

The following estimate of the cost of the substructure on the present plan we have made ourselves, with as much care as possible, having failed to get any such information or estimate from the bridge company:

Pier No. 1: Excavating for foundation above water, 490 cubic yards, at 75 cents	$368.00	
Timber grillage, 1,600 cubic feet, at 30 cents	480.00	
833 cubic yards masonry, including cut stone, at $18	14,994.00	
		$15,842.00
Pier No. 2: Excavation for foundation above water, 540 cubic yards, at 75 cents	405.00	
Timber grillage, 2,880 cubic feet, at 30 cents	864.00	
1,160 cubic yards masonry, including cut stone, at $18	20,880.00	
		22,149.00
Pier No. 8		22,149.00
Pier No. 3: Preparing and placing foundation	7,500.00	
3,843 cubic feet of timber for grillage, at 30 cents	1,153.00	
Riprap protection of large blocks, clamped	7,500.00	
1,290 cubic yards masonary, including cut stone, at $18	23,220.00	
		39,373.00
Pier No. 4		39,373.00
Pier No. 5: Preparing and placing foundations	7,500.00	
Riprap protection	4,000.00	
Excavation for foundation above water, 540 cubic yards, at 75 cents	405.00	
Timber grillage, 2,880 cubic feet, at 30 cents	864.00	
1,160 cubic yards of masonary, including cut stone, at $18	20,880.00	33,649.00
Pier No. 7		33,649.00
Pier No. 6: Pr pivot pier: Preparing and placing foundation	12,000.00	
7,770 cubic feet of timber for grillage, at 30 cents	2,310.00	
Riprap protection of large blocks, clamped	10,000.00	
2,500 cubic yards masonary, including cut stone, at $18	45,000.00	
432,000 feet, board measure, of timber in crib of pivot guard, framed and bolted, at $40	17,280.00	
3,100 cubic yards of stone for crib, at $1.50	4,650.00	
8,000 pounds iron plate for sheathing to ice breaker, at 10 cents	800.00	
54,000 feet timber for guide float, at $40	2,160.00	
		94,200.00

	Pier No. 9: Excavation for foundation above water, 360 cubic yards, at 50 cents	$180.00	
	30 cubic yards concrete foundation, at $6	180.00	
145	360 yards masonary, including cut stone, at $18	6,480.00	
			$6,840.00
	Total cost of piers		307,224.00

APPROACH FOR RAILROAD AND WAGON ROAD ON NEWPORT SIDE FROM MAIN ABUTMENT ON MARKET STREET.

578 yards stone masonary, at $18	$10,404.00	
718 yards concrete, at $6	4,308.00	
486 yards brick work, at $15	7,290.00	
240 yards McAdam stone, at $2	480.00	
Bridge for railroad of 58-foot span	3,000.00	
		25,482.00

APPROACH FOR RAILROAD IN NEWPORT, BETWEEN MARKET AND SOUTHGATE STREETS.

200 yards stone masonary, at $18	$3,600.00	
300 yards concrete, at $6	1,800.00	
180 yards brick work, at $15	2,700.00	
82 yards McAdam stone, at $2	164.00	
Grading and paving streets	500.00	
772 feet rails, 25¾ yards (60 pounds per yard), 15,440 pounds, at $85 per ton	656.00	
193 ties, at 50 cents	96.00	
		9,516.00
Total cost of approaches on Newport side		34,998.00

CINCINNATI APPROACH FOR RAILROAD AND WAGON WAY FROM ABUTMENT TO FRONT STREET.

1,994 yards stone masonary, at $18	$17,892.00	
428 yards concrete, at $6	2,568.00	
1,007 yards brick work, at $15	15,105.00	
142 yards McAdam stone, at $2	284.00	
Railroad bridge over wagon way, 84-foot span	5,000.00	
		40,849.00

146 CINCINNATI RAILROAD APPROACH FROM FRONT STREET TO LITTLE MIAMI DEPOT.

Bridge for railroad over Front Street, 84-foot span	$5,000.00	
120 cubic yards masonary abutment, at $18	2,160.00	
20 cubic yards concrete, at $6	120.00	
64,000 feet lumber in trestles, framed and erected, allowing for only single track, at $35	22,400.00	
1,000 yards embankment, at 50 cents	500.00	
2,000 feet of road requiring 3,333⅓ yards of rails, at 60 pounds per yard, 80,000 at $85 per ton	3,400.00	
1,000 ties at 50 cents	500.00	
		$34,080.00
Total cost of approaches in Cincinnati side		74,929.00

RECAPITULATION.

Total cost of piers	$307,224.00
Total cost of approaches on Newport side	34,998.00
Total cost of approaches on Cincinnati side	74,929.00
Grand total	417,151.00

DESCRIPTION OF THE SUPERSTRUCTURE OF THE NEWPORT AND CINCINNATI BRIDGE AND ESTIMATE OF ITS COST WHEN COMPLETED ACCORDING TO PRESENT DESIGN.

That charters of this bridge, obtained from the legislatures of Ohio and Kentucky, leave it optional with the company to construct any kind of bridge which they may select that will not obstruct the navigation of the river more than is authorized by the laws of the United States.

147 The ordinance of the city of Newport granting the use of portions of the streets for the purpose of a bridge makes one of the terms of the grant that said bridge shall be constructed and used for "the passage of vehicles and foot passengers across the Ohio River and for railroad purposes." It therefore became necessary, if the bridge was to be built within the limits of the city of Newport, to construct it as a combined wagon and railroad bridge. The trusses are being built by the Keystone Bridge Company after their usual designs.

The plan of superstructure adopted is to place the two trusses so close as to allow a clear space of 1⅓ feet for the passage of trains.

This is the very lease that will admit the largest-sized passenger cars capable of using the Little Miami gauge of 4 feet 8½ inches. The floor beams are of iron, suspended generally from the lower ends of each post and projecting each side of the truss so as to permit of a wagon way 6 weet wide and a sidewalk 3 feet wide, the space outside the trusses being 10½ feet. The superstructure is thus 38½ feet in width over all. The railroad track rests on the suspended iron floor beams, except for two spans on the Cincinnati side and one span on the Newport side, in which spans the railroad track is supported on separate floor beams intermediate between the top and bottom chords. These spans are further peculiar in having a horizontal top chord with the lower chord on the grade of the wagon-road approaches, to wit, on a slope of 5,637 feet to 100. The tops of the piers are 73 feet above low water, but as the floor beams are 1½ feet deep, suspended below the bottom chord, there is left an unobstructed headway of 71½ feet.

The drawings which we have received show the proposed arrangements of the first two spans on the Cincinnati side. The trusses already erected over the space between Piers No. 7 and 8 show us what the span is to be. We have also been furnished with drawings of the pivot or draw span. Thus far we have not been informed of the moving load the bridge is designed to support. It is probable,
however, that an allowance of load equal to 2,500 pounds
148 per lineal foot of the railroad, and 100 pounds per square foot of the wagon road, and 75 pounds per square foot of sidewalk has been provided for. The load to be sustained outside of the trusses is therefore about 1,575 pounds per lineal foot. The width of roadway and sidewalk is very small, and the arrangement for wagon way alongside of the railroad is very objectionable. The sum of the weights of roadway bearers for both kinds of road, longitudinal beams, railroad ties and rails, wagon-road floor, and handrail is about 1,000 pounds per lineal foot of bridge. From these we obtain the proper elements for calculating the dimensions of the trusses required for supporting these permanent and rolling loads. The bridge company not having furnished us with any statement of the cost of making the trusses we have made out calculations on the basis of the cost of the bridges heretofore built by the Keystone Bridge Company and have allowed market rates for the kind of work required.

The following is an estimate of the cost of the superstructure as now being built, from abutment to abutment, a distance of 1,782½ feet:

ESTIMATE OF COST OF SUPERSTRUCTURE OF BRIDGE, AS BEING BUILT, INCLUDING ROADWAYS, RAILS, SIDEWALKS, &C., COMPLETE.

One span of 418 feet, out to out	$160,000
One draw span, 260 feet	38,000
Apparatus for turning	7,000
One span, 237 feet	48,000

Two spans, 202½ feet each, at $39,500	$49,000
One span, 137½ feet	13,500
One span, 132 feet, including bottom chord and double roadway bearers	16,000
Two spans, 96 feet, including bottom chord and double roadway bearers	14,000
Total	375,500

149 EFFECT WHICH THE BRIDGE AS NOW BEING CONSTRUCTED WILL HAVE UPON THE NAVIGATION OF THE OHIO RIVER.

The objections urged by those interested in the navigation of the Ohio River against the Newport and Cincinnati Bridge are as follows:

1. That the bridge is too low.

2. That the character of the commerce of the Ohio River is such that no drawbridge can be made at Cincinnati that will not seriously obstruct navigation.

3. That the channel span is so located that it is difficult to reach and dangerous to turn.

The question of the proper height for a bridge at Cincinnati to connect that city with Covington was agitated for many years, and the existing suspension bridge is the result of a compromise between the interests involved. For a long time *that* river men would not agree to a less height than 125 feet with a span equal to the average width of the river. As a bridge of such great height could not be built with practicable grades for vehicles, without excessive cost and limited usefulness, a compromise was finally effected, in accordance with which the present structure was erected, with a height of 103 feet, at the crown, and a clear span of 1,000 feet. But even this bridge is somewhat of an obstacle, as in high water the larger-sized steamers cannot pass under it, and the velocity of the current is *preceptibly* increased by the contraction of the water-way by its two piers. But the river interest concedes the fact that it must submit to some inconveniences for the general public good, and the compromise which resulted in the erection of this suspension bridge has been generally accepted as equitable to all parties. The result is that the bridge has been taken as the boundary between the up-stream and the down-stream traffic, one class of boats having permanent landings above the bridge, and the other below.

Comparing this bridge with that now being built between Newport and Cincinnati, we find that the latter is 31½ feet lower, with a maximum channel-span of 400 instead of 1,000 feet. The
150 Newport and Cincinnati Bridge is 71½ feet above low water, or 9 feet above extreme high water, the maximum difference between high and low water at Cincinnati being 62½ feet. It is manifest that in extreme high water nothing but low flats or rafts could pass under the bridge.

On order to show what depth of water may be expected at Cincinnati we have carefully compiled the following table from the official records of the city, as kept at the water-works office since the 1st of June, 1858, being taken twice each day, and covering a period of over twelve years. The heights given are those above the official "0," which shows dead low water, at which time there is 1½ feet of water of Four-Mile Bar above and on Rising Sun Bar below. The figures show the number of days in each month during which there is in the river the specified number of feet above low water.

River record at Cincinnati.

[Height in feet above low water.]

Months, &c.	5.	10.	15.	20.	25.	30.	35.	40.	45.	50.	55.
January	31.0	30.5	25.0	19.7	13.0	8.3	6.5	2.7	1.8	1.2	0.4
February	28.0	27.5	25.0	18.2	12.8	9.0	8.8	3.2	1.2	0.2	.....
March	31.0	31.0	29.3	27.0	21.6	14.7	10.5	5.4	3.5	1.8	0.8
April	30.0	30.0	29.0	26.6	18.2	11.8	8.3	4.5	2.1	0.1	0.1
May	31.0	30.1	22.8	14.0	8.0	5.5	3.3	1.2	0.8	0.3	0.2
June	29.5	23.2	11.8	4.7	2.3	1.5	1.0	0.3	.....	.....	.....
July	29.6	12.1	4.6	1.4	0.4	.....	.....	.....	.....	.....	.....
August	26.6	7.8	1.9	.....	.....	.....	.....	.....	.....	.....	.....
September	19.9	10.0	5.9	2.3	1.3	1.2	0.6	0.3	.....	.....	.....
October	22.0	9.1	4.8	2.4	1.3	0.7	.....	.....	.....	.....	.....
November	17.0	15.1	10.1	5.9	2.7	0.6	0.3	0.2	.....	.....	.....
December	30.3	26.3	21.3	10.2	8.8	5.3	2.3	0.8	0.1	.....	.....
Average number of days in each year	325.9	252.8	191.5	132.4	90.4	58.6	41.6	18.6	9.5	3.6	1.5
Space under bridge—feet	66½	61½	56½	51½	46½	41½	36½	31½	26½	21½	16½
Space available—feet	65	60	55	50	45	40	35	30	25	20	15

When the river at Cincinnati is 5 feet above low water, there is 5 feet on the bars above and below. When there is 10 feet the same bars show 9 feet of water, and at 15 feet by the water-work marks, they can be crossed by boats drawing 12 feet. As they are the ruling bars for long distances above and below, the depths on them show the capacity of the river at these stages. A good coal-boat rise of 8 feet at Pittsburg generally gives from 12 to 20 feet at Cincinnati, depending upon the time of year.

151 The last two lines of the table show the absolute space under the bridge at these stages, and the greatest available space allowing 1½ feet for clearance, which is the least margin that could safely be taken.

The dimensions of some of the largest packets at present regularly employed on the river above Cincinnati are as follows:

	Fleetwood.		Telegraph.		St. Charles.	
	Feet.	*In.*	*Feet.*	*In.*	*Feet.*	*In.*
Length	260	0	251	0	273	0
Width over all	70	0	68	0	70	0
Top of cabin above water	34	0	34	3	34	6
Top of texas	48	0	47	3	47	0
Top of pilot-house above water	75	0	77	0	68	0
Top of chimneys above water	.....		.....		.....	

The Fleetwood and Telegraph are regular up-river packets, running to Pomeroy and Big Sandy. The record shows that during one hundred and fifteen days in each year the former could not get under the bridge even with lowered chimneys, and that the latter would be similarly stopped during one hundred and nine days. The St. Charles is a regular Pittsburg and Cincinnati packet, and she would be compelled to use the draw during one hundred and seven days. Without lowering their chimneys none of these boats could get under the bridge at all, as those of the first are higher than the bottom chord of the bridge at dead low water, and the latter, whose chimneys have lately been shortened 8 feet, could only get under the bridge at a stage of water when she could not run at all. The Juniata, St. Mary's, and Arlington Line, are all side-wheel steamers of about the same size. There are other packets as large, and others somewhat smaller, that regularly or occasionally ply up the river, but those mentioned are about the largest.

The tops of the chimneys, when lowered as at present arranged, come about six feet above the pilot-houses, in order to secure leverage for the shears when raising them into place, and in order to get the smoke out of the eyes of the pilot at the wheel. But it is believed that they can be still further lowered by approved mechanical
152 appliances, and that the pilot-houses may be moved sufficiently forward to get out of the smoke. The mere lowering of the chimneys of a first-class boat, some of which are 5½ feet in diameter, is a job of considerable difficulty, not unattended at times with danger. The position of the pilot-house of a western steamer is a matter of great importance in order that the pilot may see the water as near the bow and stern and sides of his boat as possible. The most elevated position practicable is also required in order to see distinctly the water surface, which, to the trained eye, indicates with great precision the outlines of shoals, sunken rocks, wrecks, and snags. In the Missouri River, where the channel changes every two weeks, pilots run entirely by the appearance of the water, and the higher they are above it the more clearly they can see and interpret its variations. Then, again, western rivers are often covered with dense, low-lying fogs, which are impenetrable at the level of the main deck, but often do not rise to the height of the pilot-house. Long experience has shown the necessity of the high pilot-house and it can not be lowered without great injury to navigation.

However inconvenient and dangerous the draw may be, yet individual boats can get through it in some way or other, though not without both delay and danger. It is very narrow, only 100 feet in width, being 60 feet less than that prescribed by Congress for the bridges over the Mississippi, and the cross currents formed in so contracted an opening by the deflection of the current from the pivot guard and by the obliquity of the piers will make its passage very hazardous. Moreover, the narrowness of the waterway at Cincinnati, which causes the exceptional height of high water, also greatly increased the surface velocity, making the passage of narrow places

more dangerous than it would be at any other point of the river. No boat would dare attempt to get through from above without rounding to and backing, and, if possible, getting a line to the pivot guard and letting itself drop through. This is a delicate operation even in daytime, as the guard pier is so near the pivot pier, but at night it is almost an impracticable one. Most captains and
153 owners had sooner tie-up above the city until morning rather than risk their boats by a night passage of this draw. Such losses of time are serious losses of money, and the annoyances to passengers thus stopped while almost at their journey's end would appreciably affect the river travel. But there is a large and increasing class of traffic on the Ohio River to which the draw is an almost impassable barrier when the river is too high to pass under the bridge. It is a great mistake to imagine that the river commerce has been killed by the railroads. The latter have undoubtedly taken away all the passenger traffic, except for river towns that cannot otherwise be reached. But in the meantime the freight traffic, especially in coal, has increased enormously. Pittsburg alone shipped last year to Cincinnati, and towns below, 48,000,000 bushels of coal, and the trade increases from year to year. Other points below Pittsburg ship largely of coal and salt, and Pittsburg, Steubenville, Wheeling, and Pomeroy send down large quantities of manufactured iron, receiving in return nearly equal quantities of iron ore from Missouri. The total amount of coal that at present passes the site of the Newport and Cincinnati Bridge is estimated at 75,000,000 bushels. All of these heavy products are carried in barges made up into fleets of from two to twenty, propelled and guided by powerful towboats. Coal barges are 24 feet wide and 130 feet long, each one carrying about 12,000 bushels. Coal boats are from 25 to 26 feet wide and 168 to 173 feet long, with a capacity of 22,000 bushels. The former draw, when loaded, from 5 to 6 feet, and the latter about 8. The towing interest is now the greatest on the river, and it is the one that all river improvements and designed to accommodate and the one which builders should especially strive not to injure. Single packets, except in the matter of height, can always go wherever coal fleets can, and therefore the interests of the latter need special consideration. Moreover, the momentum of the enormous mass of coal tow is so great that the fleets can only be steered by the wheels
154 of the towboat, by the process technically known as "flanking," in which the action of the wheel is combined with that of the current to move the tow as may be desired.

Coal fleets vary greatly in size with the stage of water in the river. On 7 feet at Pittsburg, which is the least that is used (unless a coal famine below makes it profitable to run out small loads on flats), towboats generally take from seven to ten coal barges. On 11 feet they take from sixteen to eighteen coal barges, or ten coal boats, containing from 200,000 to 250,000 bushels of coal. These are about as large fleets as can be handled in the river above Louisville. Coal tows destined for points below Louisville are broken up at the Falls

and are remade at New Albany into larger fleets averaging twice the size. The Ajax has taken to New Orleans in one trip 539,000 bushels of coal contained in thirty-two boats and barges, and the Boaz 435,000 bushels in twenty-seven boats and barges. The dimensions of some of the principal towboats are as follows:

	Ajax.	John A. Wood.	Boaz.	Alps.	J. S. McDonald.	Joseph G. Bigley.	Simpson Horner.	Grand Lake.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Length over all	261	226	212	212	210	208½	206	199
Width over all	48	48	42	40	43	42⅔	40	39
Height of pilot houses	40½	45	46	40	43¾	44	40	40
Height of chimneys	71	67	68	67	66	65	65	62

By examining the table it will be seen that during ninety-nine days in each year, when the stage of water is most favorable, the Boaz can not get her pilot house under the bridge, and that the same condition holds for the John A. Wood during ninety days. The McDonald would be *stpooed* during eighty-two days in the year, the Ajax during sixty-two days, and the Grand Lake during fifty-eight days. These boats are among the largest engaged in towing, but there are in all belonging to the port of Pittsburg thirty-six towboats of about the same dimensions and seventy somewhat smaller. It should also be borne in mind that at the very time when these boats would
155 be stopped they are arriving in the greatest numbers, because it is only at such stages that coal tows can get over the Falls of the Ohio without being subjected to the delay and expense of breaking up. In order to pass through the canal in the spring when the river is high throughout, coal boats generally leave Pittsburg drawing 7 feet of water. They must therefore have at least 8 feet in order to go over the Falls.

The official records show that when there is 7 feet in the Indiana chute over the falls there is 26½ feet in the channel at Cincinnati, and that when there is 12 feet in the chute the depth at Cincinnati is 36, the ratio for the lower stages of the river being as 1 to 3. As the river rises this ration changes, 16 feet on the falls corresponding to 43 feet at Cincinnati. Above 18 feet this disparity disappears and the river depths at the two points increase equally. These facts show that at the very time that an unobstructed channel is most needed it is most obstructed by this bridge.

Suppose one of these boats, the "Wood" for example, arrives at the Newport Bridge with a fleet of eighteen barges, which is not uncommon in the spring when the river is high throughout. If the river is more than 25 feet above low water, she cannot get under the bridge, but must stop and take her tow through piecemeal. Her width, with one barge, is 72 feet; with two it is 96 feet. As the draw opening is but 100 feet, it would be manifestly dangerous, on account

both of the river current and the cross current from the pivot guard, to attempt to take through more than one barge, nor can she take this through without rounding to and dropping through by lines. To get her whole tow through she would have to pass the draw thirty-five times. If she stopped her tow a mile above the bridge, and remade it a mile below, the mere travel would be 70 miles, a distance which might be indefinitely increased should many tows arrive about the same time and occupy the landings. Add to this the loss of time and the multiplication of danger, for no draw has yet been constructed that, in spite of all precautions, has not caused loss of property, and sometimes of life, even to those most accus-
156 tomed to it, and it is evident to the most unobserving that this arrangement cannot but be prejudicial to navigation. Rates of insurance, which are ultimately paid by the consumer, must inevitably be increased.

The mere passage of a single tow is not the only consideration; for, as a general rule, when coal fleets come at all they come in large numbers. After the low water of summer the pools of the Monongahela are filled with fleets, all made up waiting for a rise, and when it comes they all start with a rush, leaving just room enough between fleets to save themselves in case of accident to the fleet in advance. During the recent rise forty-six fleets, of three hundred and sixty-nine barges, containing 4,156,000 bushels of coal, left Pittsburg within three days. To pass all these at one time through a narrow draw, which, according to the law, "shall not be required to be opened when engines or trains are passing over said bridge, or when passenger trains are due," would take several weeks. At this present time seventy-four trains daily pass over the railroad between Pittsburg and Rochester, Pennsylvania, and it will not be unreasonable to assume that in a very few years, when Cincinnati's southern connections are completed, at least this number will cross the Newport and Cincinnati Bridge. A very simple calculation will show that when this number, or even less, is reached, the delays in passing coal tows will become intolerable.

The only remedy would be to keep low tugs employed to take barges under the bridge while the boat passes through the draw. But this would not obviate the necessity of breaking the tow, as no small tugboat could control an entire fleet. No matter what means be adopted to remedy the trouble, a great and unnecessary cost would be imposed on the commerce of the country, which would endure forever; for it should be borne in mind that these massive iron bridges are built for all time. We have not only to protect the present interests of commerce and all consumers of coal in Cincinnati, and below, both private individuals and manufacturing com-
157 panies, but the interests of the unborn millions, who will in the future fill up the mighty valleys of the Mississippi and of the lower Ohio. If this bridge be once allowed to proceed to completion, experience in similar cases shows that it will be almost impossible to change or remove it in the future.

The Cincinnati Commercial in December, 1868, gave a full description of the first designs for this bridge, stating positively that it was to be 100 feet above low water, with one span of 400 feet, one of 240, and the others of 200. It was to have been a through bridge, of a width of 41 or 42 feet, and with a railroad track in the middle, and on each side a wagon road and footpath. This statement, which was copied into the Railroad Record for December, 1868, and January, 1869, page 503, could hardly have been made except on official information. Moreover, it is generally acknowledged that the bridge authorities purchased for their approaches property on Butler Street, which would only be needed for a high bridge, and which under the present plan is distant from the line of road and useless.

After a while a change took place in the composition of the bridge company, and soon after all their plans were modified and the existing design was prepared. The public were not notified that a bridge was to be built in any respect different from that previously announced, and all information in regard to the details of construction was sedulously concealed. Not the slightest intimation was given of the intention to build a low bridge with a draw, and the pivot pier was not commenced until all the others were under way, and its construction could no longer be delayed. The moment the people became aware of what the bridge company was doing the newspapers sounded the alarm and meetings were held in all the Ohio River cities, and active measures were taken to endeavor to stop the construction of so unexpected and dangerous an obstruction. To all appeals and remonstrances the bridge company contented themselves with pointing to the letter of the law, which unfortunately, permitted a low bridge, utterly ignoring the pledge of the company, as first organized, that the bridge should be a high one.

158 To ascertain the amount of commerce affected by the construction of bridges over the Ohio circulars were sent to the mayors and boards of trade of all towns on the Ohio River. Fewer replies have been received than was expected, but enough has been obtained to give a general idea of the vast proportion of the commerce that parties, who can see no other interest worth preserving than that of railroads, habitually represented as dying out.

From Pittsburg the annual shipments of coal by river are 50,000,000 of bushels, scarcely a bushel of which stops short of Cincinnati, and some of which goes to New Orleans. Fifteen hundred large barges and boats holding from 12,000 to 22,000 bushels of coal each are required for transportation, and it is taken to market by one hundred and six two-boats, mostly built expressly for this purpose. Besides coal, 120,000 tons of other articles, giving employment to fifty steamboats and sixty barges, are annually shipped. The estimated value of the packets, towboats, and barges belonging to Pittsburg alone is $5,000,000.

The record of the shipments of the port of Pittsburg for 1869 shows that eight-tenths of the entire amount of coal sent to southern ports

is transported between the 1st of December and the 1st of Jul
This would make 60,000,000 bushels passing Cincinnati during the
seven months of high water. During this time there are on
average eighty-five days when there is 25 feet of water in the chann
which is 40 per cent of seven months. We may safely assume, ther
fore, that 40 per cent of the coal running at this time would have
pass through the draw. It is estimated that the average addition
cost in loss of time and interest, and in additional insurance, w
amount to 2 cents per bushel. We therefore find that the annu
cost to the coal interest, which will ultimately be collected out of t
consumer is 2 cents per bushel on 24,000,000 bushels, or $480,000.
less than three years this would pay the entire cost of the bridg

The estimate of the amount of coal detained is quite with
159 limits, as the records show that instead of 25 feet, 28½ is
quired at Cincinnati to enable coalboats to cross the falls
safety, and they naturally time their arrivals so as to secure the
depths if possible.

It should be kept in mind that a heavy traffic in other articles,
which exact statistics are not so easily obtained, is likewise taxed, a
that for many years past the Ohio River commerce in coal, iron, sa
and other bulky articles has yearly increased at an average rate of
per cent, and will probably continue to do so unless wantonly d
stroyed by such obstacles as the Newport and Cincinnati Bridge.

Coal-boat pilots assert that it is very difficult to run the chann
span as at present located, especially during high water, on accou
of the strong set of the current toward the Kentucky shore aft
leaving the long bend above. From the waterworks, 1,600 feet abo
the bridge, the main current deflects to the Kentucky shore, and
order to reach the channel span, which is on the Ohio side, coal flee
must cross this current and flank into the Ohio shore. The chann
pier on the Kentucky side is directly in the path of coal tows, and
will be difficult to avoid striking it with large and heavy fleets. H
the coal interest been consulted, as it should have been, the 220-fo
span which the law requires to be next to the channel span wou
have been put on the Ohio side of it instead of on the Kentucky sid
This would have given ample channel for steamboats in low wat
and have secured for coal tows which can only run at a higher sta
the channel which they require and which they have hitherto alwa
used. The bridge company claim to have located their channel spa
with the assistance of pilots of Cincinnati. The board were not i
formed of the names of these pilots and therefore had no chance
examine them, but they feel satisfied that none of them were co
boat pilots, and that therefore they were not the proper persons
have decided the matter.

To change the channel pier now would require the removal of t
present Kentucky channel pier and its reconstruction at a di
160 tance of 220 feet from the present Ohio channel pier. Th
would make the new pier the Ohio channel pier, and wou

make one of the rest piers of the draw the Kentucky channel pier. But this rest as now constructed is so light that the board do not think it could with safety be used as a channel pier after being raised 30 feet, and therefore they do not recommend a change.

The board are unanimous in their opinion that the bridge as now being constructed is so serious an obstruction to navigation as to call for the interference of Congress, as provided for in the act authorizing its construction, and they would recommend that that portion of the law of July 14, 1862, which authorizes the construction of low drawbridges over the Ohio River, be repealed. But the law as it stands has been violated by the bridge company in not complying with the requirement that the "piers of said bridge shall be parallel to the current of the river as near as practicable." There was no attempt made to do this, except in locating the position of the pivot guard above the pivot pier, which location shows that the same thing was practicable for all the other piers, and in fact a virtual acknowledgment of the point by the bridge company. The piers of the bridge make an angle with the current of about 12°, which, besides having the effect of presenting a deceptive appearance to the navigator approaching the bridge, practically shortens the 400-foot span to 390 feet, which is 10 feet less than the law requires. The apparent reason for so locating the piers was to lessen the curvature of the approach on the Cincinnati side from the depot of the Little Miami Railroad, and for slight a reason even the inadequate provisions of a law that was never expected to be applied to such a site were lessened. If this bridge be allowed to stand as it is, it will be difficult to prevent other equally injurious bridges from crossing the Ohio at all points from Pittsburg to Cairo until the river traffic is absolutely ruined.

No nation can afford to destroy a natural channel of communi-
161 cation for an artificial one. The governments of Europe guard their water courses with the most jealous care, and while their railroads cross and recross them whenever necessary, their bridges are so arranged as not to sacrifice either interest. They add new channels while retaining all that nature gave. Their bridges are all built under the watchful care of the engineers of the Government, who do not only see that their plans are correct in the first place, but who watch every detail of construction to see that the work is carried on in good faith. A general law compelling such a course in this country wherever a navigable river is bridged is yearly becoming more imperative.

PROPOSED MODIFICATIONS AND ALTERATIONS OF THE NEWPORT AND CINCINNATI BRIDGE, AND ADDITIONAL COST OF THE SAME.

We unhesitatingly recommend the following modifications of this bridge:

First. That the channel span be raised 28½ feet, so that there shall be a clear headway at low water of 100 feet below the floor beams suspended from the bottoms of the post.

Second. That the pivot pier, and all its appurtenances, be remov
from the river, and a single span be placed to cover the present dr
openings.

Third. That the remaining portion of the bridge be raised su
ciently to allow the railroad to pass over the top chord if its truss
and that the wagon road on either side ascend to the height of
channel span, along the sides of the trusses, at grades not to exc
those at present adopted.

Fourth. That the wagon and railroad approaches be raised su
ciently to suit this elevated channel-span.

We present herewith an estimate of the cost of making th
changes:

ESTIMATE OF ADDITIONAL COST OF RAISING PIERS IN THE RIVER SO AS MAKE THE CHANNEL SPAN 100 FEET ABOVE LOW WATER.

162	Pier No. 1, raised 20 feet, 100 cubic yards masonry, at $20	$2,
	Pier No. 2, raised 20 feet, 100 cubic yards masonry, at $20	2,
	Pier No. 3, raised 29 feet, 212 cubic yards masonry, at $20	4,
	Pier No. 4, raised 29 feet, 212 cubic yards masonry, at $20	4,
	Pier No. 5, raised 3 feet, 32 cubic yards masonry, at $20	
	Pier No. 6, removed; material will pay for work.	
	Pier No. 7, raised 3 feet, 32 cubic yards masonry, at $20	
	Pier No. 8, raised 3 feet, 32 cubic yards masonry, at $20	
	Pier No. 9, not raised.	
		$14,

ESTIMATE OF ADDITIONAL COST, ON NEWPORT SIDE OF APPROACHES RAILROAD, WITH BRIDGE RAISED TO 100 FEET ABOVE LOW WATER.

	To raise Front Street abutment 28 feet, 100 cubic yards masonry, at $18	$1,
	For five iron trestles between Front and Market Streets	5,
	To alter and raise 28 feet the abutments for railroad bridge across Market Street, 120 cubic yards masonry, at $18	2,
	For six iron trestles between Market and Taylor Streets	5,
	For two abutments at Taylor Street, 170 cubic yards masonry at $18	3,
	For bridge over Taylor Street, 70-foot span	3,
	For fourteen iron trestles between Taylor and Bellevue Streets	15,
163	For abutment to bridge over Bellevue Street, 120 cubic yards masonry, at $18	2,
	For bridge over Bellevue Street, 70-foot span	3,
	For six iron trestles between Bellevue and Madison Streets	6,
	For abutments for bridge over Madison Street, 160 cubic yards masonry, at $18	2,
	For bridge over Madison Street, 70-foot span	3,

For ten iron trestles, between Madison and Jefferson Streets	$9,000
For abutments for railroad bridge over Jefferson Street, 115 cubic yards masonry, at $18	2,070
For approach from crossing of Jefferson Street, down to grade of Saratoga, similar to that now built between Market and Southgate Streets	8,000
	$72,130

Approaches on Cincinnati side:

To raise the wagon-way 21 feet on eight brick arches, between present main abutment and Front Street:	
1,450 cubic yards additional brickwork, at $15	$21,750
900 cubic yards additional stone masonry, at $15	13,500
850 cubic yards additional concrete, at $6	5,100
75 cubic yards additional coping stone, at $25	1,875
For two bridges for wagon-road across Front Street, each 10 feet wide, and 80-foot span	5,000
For abutments for wagon-bridge over Front Street, 333 cubic yards masonry, at $18	5,994
Embankment on wagon approach, from city grade to crossing of Front Street, 434 cubic yards masonry, at $15	6,510
1,000 cubic yards earth-filling, at 50 cents	500
164 145 cubic yards macadam stone, at $2	290
Iron railing	1,000
To raise railway approaches on Cincinnati side:	
One railroad span of 96 feet over present brick arches	6,000
Masonry for piers of above span, 103 cubic yards, at $18	1,854
Masonry for piers of span across Front Street, 244 cubic yards, at $18	4,392
15 iron trestles, 30 feet apart, including foundations and connecting beams (average 45 feet in length), at $1,500	22,500
Masonry of two piers for span of bridge across Eggleston Avenue, 1,140 cubic yards, at $18	20,520
Railroad span of 97 feet	6,000
13 iron trestles, in a distance of 410 feet, height from 27 to 37 feet	15,600
Two piers for railroad span across Kilgour, 185 cubic yards masonry, at $18	3,300
Railroad span of 45 feet across Kilgour Street	1,500
33 iron trestles, 30 feet apart, decreasing in height from 30 feet to 15 feet in a distance of 990 feet	27,750
Piers for bridge at intersection of Pearl and Front Streets, 150 cubic yards masonry, at $18	2,700
Railroad bridge, 75-foot span, between Pearl and Front Streets	3,400

800 feet railway embankment, descending to grade of Front Street, retained by masonary walls:	
1,700 cubic yards masonry, at $10	$17,000
2,220 cubic yards earth-filling, at 50 cents	1,100
	$192,165

SUMMARY.

Cost of raising piers in the river	$14,400
Cost of approaches on Newport side	72,130
165 Cost of approaches on Cincinnati side	192,065
Cost of raising trusses, already erected, and making necessary changes	10,000
	$288,695

AMOUNT THAT MIGHT HAVE BEEN SAVED BY CONSTRUCTING A HIGH BRIDGE ORIGINALLY.

Pier No. 6 and appurtenances	$94,200
Wooden trestle work from Front Street, Cincinnati to Little Miami Depot	22,400
Part of masonry in railroad approaches	5,400
Cost of raising trusses and alterations of roadway	10,000
	$132,000

There are several things about this bridge which demonstrates the necessity of having someone of skill and judgment to represent the United States and to decide upon the site of every bridge built under its laws over navigable streams and upon the location of their piers. The position selected for the channel spans is one instance to the point. It is over the main channel at an unimportant stage. The law can not be specific in such a matter and no general law could be adequate for all cases. Some discretionary power should be lodged with someone as each cases arises. It would materially aid the bridge companies.

There has been a United States officer in charge of the improvement of the Ohio River at the time the bridge has been building, and his advice and assistance, at any time, could have been obtained; but we can not learn that they were ever sought. Cases may frequently arise in which it is impossible to comply with the exact letter of the law and yet it would not be safe for the interests of navigators to permit bridge companies to decide, upon their own responsibility, what modifications are necessary and at the same time not injurious to navigators. The provision that the clear channel span shall be
400 feet and the next one 220 uses up so much of the river
166 space that there is but little margin left for selecting a place for a draw.

In the case now before us the Newport and Cincinnati Bridge Company seem to have been forced by circumstances to place their

draw where it is. The vital difficulty, however, is that no low bridge with any kind of a draw is admissible in this locality.

Respectfully submitted.

G. K. WARREN,
Major of Engineers.
G. WEITZEL,
Major of Engineers.
WM. E. MERRILL,
Major of Engineers.

Brig. Gen. A. A. HUMPHREYS,
Chief of Engineers, U. S. A., Washington, D. C.

APPENDIX E.

WASHINGTON, D. C., *February 7, 1871.*

GENERAL: I have the honor to transmit herewith a report of the Board of the United States Engineers on the Ohio River bridges, giving the condition of their investigations up to this date. The report states the impracticability of their completing the final report upon the details of the bridges already constructed before the 4th of March, and offers a project of a general law in regard to bridging the Ohio River hereafter, with acompanying remarks explanatory of the necessity for the provisions of the law.

Yours, respectfully,

G. K. WARREN,
Major Engineers and Brevet Major General,
United States Army, President of the Board.

Brigadier General A. A. HUMPHREYS,
Chief of Engineers, United States Army.

167 WASHINGTON, D. C., *February 7, 1871.*

GENERAL: The board of engineers appointed to report on Ohio River bridges would respectfully state that, after mature deliberation, they have concluded that they can not get their report ready in time to be submitted at the present session of Congress. The questions to be considered are so important that they require the most careful investigation.

There are in all eight bridges over the Ohio River, which by act of Congress we are required to consider. They are as follows: The Steubenville Railroad Bridge, the Wheeling Suspension Bridge, the Bellaire Railroad Bridge, the Parkersburg Railroad Bridge, the Newport and Cincinnati Railroad Bridge, the Covington and Cincinnati Suspension Bridge, the Louisville Railroad Bridge, and the Paducah Bridge. Of these the bridges at Steubenville and Wheeling and the Suspension Bridge at Cincinnati have been finished for several years; that at Louisville for one year; that at Parkersburg has just been finished; the Bellaire Bridge will probably be finished early in the summer; the Newport and Cincinnati Bridge is half finished; and the Paducah Bridge has not been begun. It is manifest that no delay

in the consideration of a bridge that is already completed can affect injuriously the existing status. The only bridges, therefore, that require speedy consideration are those that are in process of construction. We have already reported at length on the Newport and Cincinnati Bridge, giving at the same time a general description of all the others, and the report has been transmitted to Congress and has been printed. The modifications which, in the judgment of the board, should be made in this bridge have been clearly indicated. They can not in any way be affected by the condition of affair at any other bridge.

At Bellaire the piers in the river are all finished, and one span of the superstructure is in place. The bridge is being built according to law, and it is believed that no changes will be required. The other unfinished bridge is that at Paducah, toward which
168 nothing has yet been done except to secure a charter from Congress.

Our surveys have all been made and the maps are nearly completed, but the report can not be finished before the 4th of March next. Under these circumstances we have thought it best to take ample time for the consideration of the other bridges.

As our examinations and surveys have already given us sufficient information to enable us to recommend the necessary legislation for future bridges—which is a matter that need not in any way be complicated with the question of the bridges already built—we have concluded to submit the following project of law in regard to bridges over the Ohio River, which we believe to be reasonable and just, and to require no more of bridge companies than is absolutely essential for the preservation of the rights of navigation.

A BILL TO AUTHORIZE THE CONSTRUCTION OF BRIDGES ACROSS THE OHIO RIVER.

Be it enacted, &c., That every bridge hereafter erected across the Ohio River above the mouth of the Big Sandy shall have at least one span of a height of not less than 90 feet above low water, and of not less than 40 feet above local highest water, measured to the lowest part of the span. That every bridge hereafter erected across the Ohio River below the mouth of the Big Sandy shall have at least one span of a height of not less than one hundred feet above low water, and of not less than forty feet above highest water, measured to the lowest part of the span. That this high span shall give a clear opening of at least 400 feet between the piers, measured at right angles to the current at every stage, and that it shall be placed over that portion of the river used by boats during ordinary stages of the water: Provided, That in case this high span is not over the low-water channel suitable arrangements be made elsewhere to permit the passage of single boats under the bridge at low water. That all bridges over the Ohio River below the Covington and Cincinnati Suspension Bridge shall have, in addition to the high span pre-

scribed above, a pivot draw giving two clear openings of one hundred and sixty feet each, measured at right angles to the current at the average stage of water in the river, and located in a part of the bridge that can be safely and conveniently reached at that stage; and that said draw shall be opened promptly upon reasonable signal for the passage of boats, whose construction shall not be such as to admit of their passage under the permanent spans of said bridge, except when trains are passing over the same.

SEC. 2. And be it further enacted, That the piers of the high span and the piers of the draw shall be built parallel with the current at that stage of the river which is most important for navigation, and that no ripraps or other outside protection for imperfect foundations will be permitted in the channel way of the high span or of the draw openings.

SEC. 3. And be it further enacted, That any person, company, or corporation authorized to construct a bridge across the Ohio River by the States upon whose territory said bridge will abut, shall submit to the Secretary of War, for his examination, a design of the bridge and piers and a map of the location giving for the space of at least one mile above and one mile below the proposed location the topography of the banks of the river, the shore lines at high and low water, the direction of the current at all stages, and the soundings accurately showing the bed of the stream, and shall furnish such other information as may be required for a full and satisfactory understanding of the subject by the Secretary of War; and if the Secretary of War is satisfied that the provisions of the law have been complied with in regard to location, the building of the piers may be at once commenced; but if it shall appear that the conditions prescribed by this act can not be complied with at the location where it is desired to construct the bridge, the Secretary of War shall detail a board composed of three experienced officers of the corps of engineers to examine the case, and may, on their recommendation, authorize such modifications in the requirements of this act as will permit the construction of the bridge: Provided, That the free navigation of the river be not materially injured thereby.

SEC. 4. And be it further enacted, That all parties owning or operating bridges over the Ohio River shall maintain, at their own expense, from sunset to sunrise throughout the year, such lights on their bridges as may be required by the Light-House Board for the security of navigation.

SEC. 5. And be it further enacted, That any bridge constructed under this act and according to its limitations shall be a lawful structure and shall be recognized and known as a post route, upon which also no higher charge shall be made for the transmission over the same of the mails, the troops, and the munitions of war of the United States than the rate per mile paid for the transportation over the railroads or public highways leading to said bridge; and in case of any litigation arising from any obstruction or alleged obstruction to the navigation of said river created by the construction of any bridge,

under this act, the cause or question arising may be tried before the district court of the United States of any State in which any portion of said obstruction of bridge touches.

SEC. 6. And be it further enacted, That the right to later or amend this act so as to prevent or remove all material obstructions to the navigation of said river by the construction of bridges is hereby expressly reserved.

SEC. 7. And be it further enacted, That joint resolution No. 10, approved April 7, 1869, authorizing the construction of a bridge over the Ohio River at Paducah, be, and the same hereby is, repealed.

EXPLANATORY REMARKS.

In draughting the above bill the board had before them Senate bill No. 622, second session Fortieth Congress, which was discussed in the Senate but had not passed, a substitute having been adopted directing the appointment of a board of engineers. The following remarks are annexed in order to explain the reasons for some of the re-
171 quirements in the bill which we recommend, and also the changes from Senate bill No. 622.

SECTION 1. This section has been greatly modified. Measurements of height are now to be made to "the lowest part of the span," instead of to the bottom chord, because bridge builders sometimes suspend floor beams or other members below the bottom chord. Different heights above low water have been prescribed for bridges above and below the mouth of the Big Sandy. The reasons for this are: 1st. There are already four bridges built above the Big Sandy with a height of 90 feet above low water, while those already built below this river have a height of 100 feet, excepting the Ohio River Falls Bridge, which has an exceptional location, and the Newport and Cincinnati Bridge, 71½ feet above low water, which we have recommended to be raised to 100 feet above. 2d. The greater rise and fall of the river below the mouth of the Big Sandy, and the greater duration of high stages make higher bridges necessary to secure the same accommodations to river commerce. 3d. The natural features of the mountain regions of Virginia and Kentucky are such as to compel all east and west railroads to cross the Ohio above the mouth of the Big Sandy while the roads crossing below will be those seeking southern connections, and the roads of each class will be on a par with each other as to heights of bridges. We have placed the widest opening in that part of the river ordinarily used by coal fleets for whose accommodation these wide openings were designed, and have introduced a provision for the benefit of packet-steamers, that run when the river is too low for coal-tows, by requiring a high span over the low-water channel, also, if it be not covered by the longest span. This only requires that this span be what is called a "through" or "over-grade" bridge, with the track on the bottom chord; but it is not necessary to specify any particular length of span as economy in constructing the piers will naturally lead bridge companies to adopt

for all their spans over the river proper such dimensions as
172 will easily accommodate single steamers.

In the present state of commerce on the Ohio River the largest river steamers very seldom ascend above Cincinnati, and the bridges already constructed have made it impossible for them to do so without lowering their chimneys. Boats that habitually run on the upper Ohio are fitted with the necessary contrivances for this purpose, but those that usually ply between St. Louis and New Orleans between which ports there are no bridges, have no such facilities and are very loath to obtain them.

Many of these boats have chimneys 5½ feet in diameter, extending 50 feet above the hurricane deck, and it is both difficult and dangerous to lower them. These boats often make extra trips to Cincinnati during high water when advantageous freights are offered, and if arrangements are not made that will continue to permit this, the commerce of that city and of Louisville will be injuriously affected. At present the only bridge between the Covington and Cincinnati Suspension Bridge and New Orleans is that at Louisville. This bridge, however, besides being a high bridge, has a draw that answers both for the canal and for the river when it is high, and therefore is no obstacle. Our object is to secure the same admirable provisions for navigation at all other bridges in this section of the river. Another important consideration affecting the question of draws in high bridges is the necessity of some provision in time of war for the speedy transportation of large bodies of troops by steamboats gathered from all sources. Many of the boats so collected would be unable to pass under bridges in high, or even in ordinary water, and serious disasters might result therefrom. The great advantages to be reaped from speedy concentration of troops are so forcibly demonstrated by the course of the present war in Europe, as to make this question one that we ourselves can not safely neglect.

SECTION 2. This section does not differ materially from the same section in Senate bill No. 622. It allows more latitude in the choice of a site for a bridge, thus making more important the provi-
173 sions of section 3, which follows.

SECTION 3. This is the same as the corresponding one in the former bill, except that it gives more authority to the Secretary of War, permitting him to sanction departures from the exact text of the law in cases where a strict construction would needlessly embarrass bridge companies, and where such departures would not injure navigation. It places the whole subject under the control of a Cabinet officer, whose position guarantees a due regard for the rights of both river and rail. This control has already been given to the Secretary of War, in the case of the International Bridge Company at Buffalo, and it has resulted in a considerable pecuniary saving to them, as well as in a decided gain to navigation. The Board of Engineers have recommended that the draw of this bridge be placed near the shore instead of in the middle of the river, thus removing it from a current of six miles an hour to one of four miles, and still

maintaining the necessary depth for navigation. The bridge company are also the gainers by the change in that part of their bridge that crosses Black Rock Harbor. (Section 4 of Senate bill No. 622 has been omitted as unnecessary.)

SECTION 4. This section provides for the proper lighting of channel ways of bridges. As a matter of fact, all bridge companies on the Ohio River do light their channel spans; but it was thought best to incorporate this duty in a general law, lest it should at any time be neglected.

SECTION 5. Copied without change from Senate bill No. 622.

SECTION 6. Copied without change from Senate bill No. 622.

SECTION 7. This section repeals the joint resolution authorizing the construction of a bridge across the Ohio at Paducah. This joint resolution is identical with that under which the obnoxious Newport and Cincinnati Bridge is being built, and unless repealed at once, before work is begun, may result in the creation at Paducah of a similar obstruction. The effect of repealing this joint resolution will not be to prevent the construction of a bridge at this place, but
174 only to compel it to conform to the law which we have herewith presented.

The general effect of the proposed law is to authorize the construction of bridges at any points on the Ohio River for which a bridge company can get charters from the two States owning the shores.

Respectfully submitted.

G. K. WARREN,
Major Engineers and Brevet Major General U. S. Army.
G. WEITZEL,
Major of Engineers and Brevet Major General.
WM. E. MERRILL,
Major Engineers and Brevet Colonel.

General A. A. HUMPHREYS,
Chief of Engineers United States Army.

AFFIDAVIT OF JOHN E. GREINER.

(Filed November 30, 1904.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES
vs.
THE PARKERSBURG BRANCH RAILROAD COMPANY ET AL. } In Equity.

John E. Greiner, having been duly sworn, deposes and says: I am engineer of bridge & buildings of the Baltimore and Ohio Railroad Company and have held this position for 13 years, during all of which time I have been familiar with the bridge over the Ohio River at Parkersburg. This bridge was originally made up of a number of spans of the "Bollman" type, all of which were deck bridges

175 on the approach. The main channel spans were of the type known as the "Keystone." The construction of this bridge was begun in 1869 and the bridge was completed in 1871, and is now 33 years old. It has been the experience with all the older railroads that the life of a railroad bridge is only from 20 to 25 years, and that the changes in conditions of traffic and the wear and tear on these structures renders the renewal of bridges in this short period necessary, not only for the safety of the traffic, but for the proper maintenance of traffic, and as these channel spans have now stood from 8 to 13 years longer than the average life of bridges the railroad company feels in duty bound to renew them. Owing to weaknesses which have developed from time to time the Bollman spans of the bridge were gradually renewed, and we have renewed them with structures of ample strength for present traffic.

At the present time the bridge is fully capable of carrying the regular traffic of the railroad with the exception of the two main channel spans. These channel spans are of an old and antiquated type of construction, totally unfit for modern railroad traffic, and are not capable of carrying engines or cars weighing in excess of about 120,000 pounds. As the coal cars in regular service throughout the entire Baltimore and Ohio Railroad system weigh, when fully loaded, approximately 150,000 pounds, these cars, which form a considerable portion of our equipment, are barred from crossing the bridge. The freight engines in regular service on the Parkersburg Branch, which connects with the bridge at the east, weigh approximately 190,000 pounds. Nearly the same class of engines and cars of the maximum capacity can be operated on the Ohio Division on the western side of the bridge, but the connecting link between these two divisions renders it necessary to operate over the bridge engines which only weigh 120,000 pounds, as before stated, and this embarasses the proper and economical operation of our railroad. After the present weak spans are renewed with structures of the same strength as the balance of the bridge the railroad company
176 can handle its heaviest cars between Philadelphia and St. Louis in the most direct line.

J. C. GREINER.

Subscribed and sworn to before me this 28th day of November, 1904.
[Notarial seal.] GEO. W. HAULENBEEK,
Notary Public.

AFFIDAVIT OF F. A. GOULD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this second day of November, A. D. 1904, before the subscriber, a notary public in and for said State and county, personally appeared F. A. Gould, who, being by me first duly sworn, deposes and says that he resides in Pittsburg, and that he has been regularly en-

gaged on steam vessels on the Ohio River since 1871, and has been a master and pilot since 1880; that he is thoroughly familiar with all the conditions of navigation on the Ohio River at the site of the Parkersburg Bridge of the B. & O. R. R. Company across the Ohio River at Parkersburg, West Virginia, and has been and is now master on the largest class of towing steamers used on said river; that for the past three years he has been and is master and pilot of the steamer "Charles Brown"; that the size of tows of coal taken by steamers on the Ohio River has increased 200 per cent or more; that this deponent has been obliged to lay up over night many times with boat and tow when descending the Ohio River because it is too dangerous to try to run this bridge except in daylight, and even then navigation is attended with great hazards. In all the boating experience of this deponent, covering hundreds of trips, he has never run this bridge except three times at night, and this was under the stress of circumstances beyond his control. This tying up of the boat and tow at nights occasions great loss of time and money and frequently results in the boats being delayed so long as to be unable on her
177 return to Pittsburg to get out with another tow before the river has fallen to such a low stage that coal can not be moved, resulting in the loss of an entire trip for the boat. The channel span of this bridge, in this deponent's judgment, should be reconstructed by removing the left-hand channel pier and throwing the two spans into one, and even this would not entirely remove the hazard and permit free and easy navigation under the bridge at night or in bad weather. This bridge is at a place in the Ohio River where a boat or tow must be put into position to run a bad bend in the river, and the span being too narrow the boat can hardly be put into proper shape to run this bend and has to work exceedingly hard to keep from hitting the shore below, the danger being added to by the location of the bridge so near Blennerhassett Island and towboats navigating the Ohio River have to get into position long before they come to any particular place to run it, and the bridge being so dangerous to run the boat has to work hard and do the best it can towards getting in shape to continue its voyage below the bridge.

FRANK A. GOULD.

Sworn to and subscribed before me the day and year aforesaid.
[Notarial seal.] J. W. BARBER, *Notary Public.*
My commission expires Jan. 19, 1907.

AFFIDAVIT OF JOHN M. DIPPOLD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 2nd day of November, A. D. 1904, before me, the subscribed, *and* notary public in and for said county and State, personally appeared John M. Dippold, who, being by me first duly sworn,

deposes and says that he resides at Sewickley, Pa., and has been master and pilot of steamers navigating the Ohio River for twenty (20) years, and is at present so engaged, and is thoroughly familiar
178 with the condition of navigation on the Ohio River at the site of the Parkersburg Bridge of the B. & O. R. R. Co., across the Ohio River at Parkersburg, W. Va., and that said bridge is an unreasonable obstruction to navigation on account of its narrow channel span, and that this deponent had never run the Parkersburg Bridge at night, except three times, and then he was compelled to do so on account of being caught in the flood and ice, the danger being so great invariably as to cause him to tie the boat up at night above the bridge waiting for daylight to run its narrow and dangerous channel span. To render navigation under this bridge reasonable safe, the left-hand pier of the shore-channel span should be removed and the shore-channel span and the span adjacent to it on the left should be made into one span. The navigation at this point is made extra hazardous for the reason that there is a short bend at the site of the Parkersburg Bridge and the steamers have to drive through the bridge heading into the bend, and after running the bridge there is great danger of hitting the bank of the bend, and also the difficulty is increased by having to get the boat and tow in shape to get it to Blennerhassett Island, about one and one-half (1½) miles below the bridge.

JOHN M. DIPPOLD.

Sworn to and subscribed the day and year first above written.
[Notarial seal.] J. FRANK TILLEY, *Notary Public.*
My commission expires Jan. 19, 1907.

AFFIDAVIT OF A. O. ACKARD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 3rd day of November, A. D. 1904, before me, the subscriber, a notary public in and for said county and State, personally appeared Captain A. O. Ackard, who, being by me first duly sworn, deposes and says that he has been a master and pilot on the largest class of steam vessels navigating the Ohio River for fifteen
179 (15) years, and that he is thoroughly familiar with the conditions of navigation at the sight of the Parkersburg Bridge of the Baltimore & Ohio Railroad Company across the Ohio River at Parkersburg, West Virgina, and in this deponent's experience and judgment said bridge is an unreasonable obstruction to navigation by reason of its location at a bend in the river and of the very narrow channel span. It is necessary in operating towboats with tows at this point to drive through the bridge and then the boat

must work very hard to keep from running into the shore in the be
below this bridge. And as towboats with large tows have to get i
proper position a long ways from any particular place which th
have to run, the location of this bridge so near the head of Blenn
hassett Island is an added hazard and difficulty. In all this deponen
boating experience in the time above stated he has never run t
bridge but once at night, and this only when a landing could not
made on account of ice in the river, he having made at least a hundr
trips where he had to lie above this bridge at night waiting for da
light to run the narrow and dangerous channel span. This brid
should be reconstructed by moving the left-hand pier of the sh
channel span, throwing the two spans into one. Even then th
would be a hazard and danger running it at night, but the conditi
would be so much better that boats could get into better position
keep out of the bend below and pass Blennerhassett Island in safe

A. O. ACKARD

Sworn and subscribed before me the day and year above mention
[Notarial seal.] W. L. FOULTZ, *Notary Public*
My commission expires June 11, 1905.

AFFIDAVIT OF D. A. WOODWARD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this second day of November, A. D. 1904, before me,
180 subscriber, a notary public in and for said State and coun
personally appeared D. A. Woodward, who, being by me fi
duly sworn, deposes and says that he resides at Charleston,
Virginia, and has been a master and pilot on steam vessels of
largest class navigating the Ohio River for twenty-one years, and
thoroughly familiar with the conditions of navigation at the site
the Parkersburg Bridge of the B. & O. R. R. Company, across
Ohio River, at Parkersburg, West Virginia, and said bridge, in t
deponent's experience, is an unreasonable obstruction to navigat
by reason of the bridge's location and the narrow channel span. T
this bridge is never run at night, except under exceptional circu
stances, and in all this deponent's experience of more than twe
years he has only run it seven or eight times at night. Of the h
dreds of trips this deponent has made, being from ten to fifteen
year, the danger is so great that the boat and tow are tied up ab
the bridge at night waiting for daylight to run it, and notwithsta
ing all the care taken and the skill used on the 15th day of Decemb
1899, about 10 a. m., in broad daylight, this deponent was pilot of
steamer " Ed. Roberts," of Pittsburg, when said steamer's tow had
unavoidable collision with the left-hand pier of the Parkersb
Bridge and sunk two barges of coal; but notwithstanding the he

loss from collisions with the piers of this bridge the loss by delay is much greater. The dangers of navigation through this bridge are greater by reason of the fact that the boat and tow must run a bend in the river immediately below the bridge, and the span being so narrow there is no room nor time to get the boat and tow in proper position to run this bend, and, in addition to this bend, the boat and tow must also prepare to pass Blennerhasset Island, another bad piece of river, within a mile and a half of the Parkersburg Bridge. This bridge, in this deponent's judgment, should be reconstructed by removing the left-hand pier of the shore channel span and throwing the two spans into one, when probably towboats with tows would be able to navigate at night through the wide channel span
181 thus provided, and even under such favorable conditions as the two spans thrown into one there would still be risk of hitting the piers.

D. A. WOODWARD.

Sworn and subscribed before me the day and year aforesaid.
[Notarial seal.] J. FRANK TILLEY,
Notary Public.

My commission expires Jan. 19, 1907.

AFFIDAVIT OF JAS. H. MORRIS.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this the first day of November, 1904, before me, the subscriber, a notary public in and for said county and State, personally appeared Jas. H. Morris, who being by me first duly sworn deposes and says that he resided in Pittsburg, Pa., and has been a master and pilot on steam vessels for thirty years or more, and is thoroughly familiar with the conditions of navigation on the Ohio River, and in the vicinity of the Parkersburg Bridge of the Baltimore & Ohio R. R. Co. across the Ohio River at Parkersburg, W. Va., and in this deponent's judgment the Parkersburg Bridge is an unreasonable obstruction to navigation by reason of the narrowness of its channel span, and this deponent has tied up his boat and tow many times above this bridge at night waiting for daylight to run the channel span of said bridge, causing a loss of time and additional expense for the trip; that said channel span in this affiant's judgment should be reconstructed by removing the pier between the two channel spans, thus throwing them into one span. And the bridge is badly located, being in a bend of the river, where a much wider span is needed than at other places, and because a steamboat and tow has to drive ahead to get through the bridge, and the boat and tow after passing the bridge is in great danger of hitting the shore of the bend below the bridge, whereas if the bridge were not there, or if the span was

twice as wide the boat could be gotten into shape for runni
182 the bend without hazard; also the difficulties of navigation
increased because the boat has to get in shape to pass Blenn
hassett Island, the head of which is a mile or a mile and a half bel
the Parkersburg Bridge. And further deponent saith not.

JAMES H. MORRIS

Sworn to and subscribed before me the day and year first abo
. mentioned.

[Notarial seal.] J. FRANK TILLEY,
Notary Public

My commission expires Jan. 19, 1907.

AFFIDAVIT OF JAS. A. WOODWARD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this second day of November, A. D. 1904, before, me the su
scriber, a notary public in and for said State and county, persona
appeared J. A. Woodward, who being by me first duly sworn, depo
and says that he resides at Pittsburg, in Allegheny County, Penns
vania, and has been a master and pilot on steam vessels navigating t
Ohio River for more than thirty years, and is thoroughly familiar wi
conditions of navigation on the Ohio River, at the site of the Parke
burg Bridge of the B. & O. Railroad Company, across the Oh
River, at Parkersburg, West Virginia, and that said bridge is
unreasonable obstruction to navigation by reason of its narrow cha
nel span. That this deponent has been continuously engaged
navigating the Ohio River for the period above stated, and th
never run said bridge with a loaded coal tow at night, except und
stress of circumstances, the danger of running the narrow chan
span being so great as to make it hazardous even in daylight, and
all the voyages, which are ten or twelve trips a year, with exceptio
noted, he has been obliged to tie up his boat and tow at night wh
this bridge was reached any time near night fall, waiting for daylig
to run the bridge, losing time and being under the usual ope
183 ating expense while the boat was laid up. The dangers
navigation are increased at this point because the boat has
drive into the channel span of this bridge to run it, and there
always hard work flanking out of the bend below and getting in
shape to run Blennerhassett Island, about a mile and a half belo
said bridge.

Owing to improved methods, the machinery, etc., and a great
demand for fuel in the South, the size of the tows has doubled
more so that the steamer D. W. Woodward, which this depone
commanded as late as 1886 or 1887, took 125,000 bushels of coal
her regular tow, and boats of the same class to-day do take 300,0

bushels of coal, but they are in great danger of hitting the piers of this bridge, and frequently do hit them. If there were no piers in the river at this place even much larger tows would be safely taken. To render navigation only moderately safe the left hand pier of the channel span should be removed and the two spans thrown into one, and while this would not entirely remove the hazards, steamboats would then probably try to run this bridge at night.

JAS. A. WOODWARD.

Sworn and subscribed before me the day and year aforesaid.
[Notarial seal.] J. W. BARBER, *Notary Public.*
My commission expires Jan. 19, 1907.

AFFIDAVIT OF THOMAS T. DUNLEVY.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 3rd day of November, A. D. 1904, before me, the subscriber, a notary public, in and for said county and State, personally appeared Thomas T. Dunlevy, who, being by me first duly sworn, deposes and says that he resides in Pittsburg, Pa., and has been engaged as master and pilot on the largest steamers navigating
184 the Ohio River for the past twenty years, and that he is thoroughly familiar with the conditions of navigation in the vicinity of the Parkersburg Bridge of the Baltimore & Ohio Railroad Company, across the Ohio River, at Parkersburg, West Virginia; and said bridge is an unreasonable obstruction to navigation by reason of its bad location at a bend in the Ohio River, and more particularly by reason of its narrow channel span.

Within the twenty years of this deponent's experience, the size of tows taken down the Ohio River has been increased from two to three times in this deponent's judgment, due to improved methods and the improvement of the river by the Government and greater skill on the part of the steamboat pilots and in response to the greater demand for fuel in the South.

The Parkersburg Bridge is located at a point in the Ohio River where it is necessary to get it into position to run the sharp bend, but owing to the narrow span of this bridge the boat has to continue drifting and pushing until she runs this bridge, and then only with great difficulty can the head of the tow be kept from hitting the shore in the bend below. The tows taken down the Ohio River by steam vessels are merely guided and their courses governed by the movements of the steamboat, which switches, twists, and turns the fear of the tow and by the pilot's skill in so doing and taking advantage of the currents in the river on different sides of the tow takes the tow safely down the river, but where the room is unsufficient for such operations, as the narrow span of this bridge, the navigation of the boat and tow is attended with great hazard.

In the two hundred or more trips which this deponent has made down the Ohio River with coal tows he has run this bridge six or eight times at night, but under such stress of circumstances as a falling river, ice, or something so urgent as to force him to take the great risk. Just after passing this bridge, while it is with the greatest difficulty that the head of the tow can be kept from hitting the bend on the West Virginia side, it immediately becomes
185 necessary to begin maneuvering to get the boat over to the Ohio side in order to pass to the right of Blennerhassett Island, the head of which is a mile or a mile and a half below the bridge. In order to make navigation reasonably safe at this point the left hand pier of the short channel span should be removed throwing the two spans into one, which would be, as this deponent is informed, about 650 feet, under which conditions the steamboat would not be so likely to hit the pier, and "flanking" operations could be taken much higher up the river; then there would be no difficulty in running the bend below, getting into proper shape to run Blennerhassett Island.

Under present conditions the loss of this one night's time tying up imposes a money loss of not less than seventy-five ($75.00) dollars, while the consequential losses are difficult to determine for the reason that on the class of steamers on which this deponent acts as master and pilot is engaged in towing coal from Pittsburg to Louisville, Kentucky, where several tows are turned over to one large and powerful vessel or steamer used in towing coal from Louisville to New Orleans, which large steamer may be kept waiting at Louisville for a tow to be brought to her, and one night's delay might mean the loss of a trip to New Orleans, for said steamer on account of the river falling, so thus delayed the steamer could not get away from Louisville, or she might loose what is known as "Falls Water" at Louisville by such a delay, and have to use the Louisville and Portland Canal, causing an additional delay of at least twenty-four hours. In this deponent's judgment, if this span were widened to 650 feet, Ohio River towboat men, when fair weather prevailed, could run the span at night, thus avoiding the delay.

THOMAS T. DUNLEVY.

Sworn to and subscribed the day and year first above written.
[Notarial seal.] J. FRANK TILLEY, *Notary Public.*
My commission expires January 19, 1907.

186 AFFIDAVIT OF W. R. RENO.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this third day of November, A. D. 1904, before me, the subscribed, a notary public in and for said State and county, personally appeared W. R. Reno, who, being by me first duly sworn, deposes

d says that he resides in Pittsburg, Pa., and has been a pilot for 35 ars and a master for 12 years on steam vessels navigating the Ohio ver in the vicinity of the Parkersburg Bridge of the B. & O. Rail- ad Company across the Ohio River, at Parkersburg, West Virginia, d the said bridge is an unreasonable obstruction to navigation by ason of its bad location just above the bend in the river, and more rticularly by reason of its very narrow channel span. This de- nent was a pilot on the steamer "Joseph Walton," of Pittsburg, om 1873 to 1878, and at that time said steamer took 10 barges of al containing about 125,000 bushels of coal down the Ohio River, id steamer "Joseph Walton," having on her the engines which had fore been used on the steamer "Niagra," which vessel, the "Ni- ra," took seven barges as her regular tow, but owning to the greatly anged conditions, such as improved methods, greater demand for el, and the fact that the Ohio River has been improved by the overnment, and the superior skill of pilots of this day, this de- nent was again master and pilot on the same steamer "Joseph alton" in 1900, 1901, and 1902, and the conditions were so changed at in the three years just mentioned he regularly towed down the hio River with the said steamer "Joseph Walton" from 17 to 22 rges of coal, and with tows of that size he ran the Parkersburg ridge two times by night, one trip on account of all the landings ove the bridge being filled with other towboats and tows, so he uld find no place to land, the other time on account of the river lling so fast the risk of running the narrow span was taken in preference to being left stranded by low water.

7 The time lost in tying up above this bridge at night, and extra expense of the boats of the class of the steamer "Joseph alton," amounts to at least $100.00 each night, besides sometimes sulting in the boat getting back to Pittsburg, having to lay up on count of low water below Pittsburg, or failing to go back to Pitts- rg in time to take another tow out. There is a very deed bend low this bridge, and tow boats do what is known among pilots as flanking" the bend; that is, the boat and tow are placed quartering the current, thus taking up two or three times the width of the tow ith regard to the current of the river, or from 400 to 500 feet, so that make navigation by bridges safe, to give play to this flanking ovement, there should be about 100 feet clearance on either side f the tow, fixing the space needed by safe flanking at about 700 feet f clearance. If the left-hand pier of the shore channel span of this ridge were removed, and the two spans thrown into one, providing mething like 650 feet clearance, in this deponent's judgment, Ohio iver towboat men would not tie up above this bridge at night, un- ss in bad weather, but would continue their voyage at night down ie river. In this deponent's information a number of steamboats ave been unable to clear the bend below this bridge because the nar- w channel span kept them from getting the boat and tow in the roper flanking position, and have struck the West Virginia shore ith the head of the tow, whereas, if the span had been wide enough

to permit flanking through it, they could have cleared the bend easily. The head of Blennerhassett Island is about one mile and a half below this bridge, and the channel of the Ohio River is to the right of this island, so that the tow must immediately be maneuvered to get into position to cross towards the right side of the river and pass down to the right of this island. On account of the narrow spans of the Steubenville Bridge 66 miles below Pittsburg, and the Bellaire Bridge, 90 miles below Pittsburg, it is necessary to have two towboats take the tow intended for one towboat from Pittsburg to a point below the Bellaire Bridge, where the two tows are given
188 to one steamer, which steamer proceeds down the Ohio River.

The expense of sending the two steamers with one steamer's tow on down below the Parkersburg bridge would be too great to entertain.

W. R. RENO.

Sworn to and subscribed before me the day and year aforesaid.
[Notarial seal.] J. W. BARBER, *Notary Public.*
My commission expires Jan. 19, 1907.

AFFIDAVIT OF DANIEL M'INTYRE.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 3rd day of November, A. D. 1904, before me the subscriber, a notary public in and for said county and State, personally appeared Daniel McIntyre, who being by me first duly sworn, deposes and says that he resides in Alleghany, Pa., and has been a master and pilot continuously since 1865, and has been for the past 17 years, and is at present, master of the steamer "John Morean," of Pittsburg, Pa.; that he is thoroughly familiar with the conditions of navigation at the site of the Parkersburg Bridge of the B. & O. R. R. Co. across the Ohio River, at Parkersburg, West Virginia, and said bridge is an unreasonable obstruction to navigation under present conditions.

This deponent remembers clearly the building of the Parkersburg Bridge, and river men at that time thought the bridge had quite a long span, because it was built in the days before long-span bridges, such as we have now, could be constructed, and at a time when very small tows of coal were taken down the Ohio River. At the time this bridge was built—that is, about 1869—this deponent was master of the steamer "W. A. Stone," of Pittsburg, and said boat at that time took as a full tow five (5) coal boats holding about 105,000 bushels of coal, or another kind of a tow the same vessel took consisting of six (6) barges holding about 75,000 bushels of coal; a boat of the same
189 size and power to-day takes ten (10) coal boats containing 250,000 bushels of coal, or seventeen (17) barges of coal containing 238,000 bushels of coal, due to improvements of all kinds, in-

cluding the better natural channel provided by the Government, and are only restricted by the bridge piers in the river.

The steamers "Niagra," "Hercules," "Sampson," and "Lioness" were navigating the Ohio River about the time this bridge was constructed, and were built and known as seven barge boats; this is, boats that would tow seven barges of coal down the Ohio River. The engines from the steamer "Niagra" were put on the "Joseph Walton," those of the "Hercules" on the steamer "Valiant," those of the "Sampson" on the steamer "Ed. Roberts," and those of the "Lioness" on the "Pacific No. 2;" now with the same machinery in use, then taking seven barges to market, the steamers "Joseph Walton," "Valiant," "Ed. Roberts," and "Pacific No. 2," all of Pittsburg, Pa., and all now regularly engaged in towing coal on the Ohio River, which take and can handle easily, where there are no bridge piers, twelve (12) coal boats and five (5) barges in one tow, containing 370,000 bushels of coal, or twenty-two barges in one tow, containing 308,000 bushels of coal, but they have to lay up at night above the Parkersburg Bridge waiting for daylight to run its narrow and dangerous channel span; they could tow more coal at one time if these bridge piers were not in the river. The method of towing in the Ohio River is illustrated by a steam vessel known as a towboat hitched into a number of loaded coal craft, designated as coal boats, each holding about 25,000 bushels of coal, barges each holding about 14,000 bushels of coal, and flats each holding from 5,000 to 8,000 bushels of coal; the conditions of the trade demand that this craft be delivered to the market as cheaply as possible and a steamboat takes as many as it can handle. It is the skill of the pilot, however, and not especially the power of the towboat that enables coal shippers to send such immense fleets of coal down the Ohio River.

190 The towboats acts as a rudder and guiding power to the coal fleet, "flanking," twisting, steering, and guiding the tow by the force it exerts from the rear end of the tow down the river; sometimes the tow is lying quartering, it being nearly square across the river, with the wheel revolving backwards, thus enabling the tow to be taken safely around the points and bends in the river, the current of the river being a potent factor in this maneuvering, and being taken advantage of by the skilfull pilot, and the tow which this deponent takes down the Ohio River measures in length about 830 feet over all and 130 to 150 feet in width over all.

When this tow is "flanking"—that is, going almost sideways in the water, the steamboat with reference to the flow of the current is taking up 400 or 500 feet in width of the river and this explains the necessity of having large channel spans in bridges, coupled with the fact as before stated, that all towboats are merely the guiding power for the tow and can not steer it or run it where willed as the steamboat known as the packet can be run, but can only approximately keep within defined limits. This bridge is located right at a point where this "flanking" operations ought to be carried on to

enable the tow boat to safely "flank" the great bend immediately by the bridge and to get the boat in shape to pass Blennerhassett Island, but because the channel span of this bridge is so narrow the pilot must "drive" with his boat and tow through its narrow passageway and then use every exertion to keep the head of the tow from hitting the shore in the bend below the bridge. If the bridge were not located where it is the steamboat and tow would begin floating and "flanking," far above the sire of this bridge, and by the time the boat and tow reached the bend where this bridge crosses the river, going sideways almost, they would be taking up more than 100 feet more space in the river; then, as provided by the channel span of this bridge, it emphasizes the extent to which this bridge unreasonably obstructs navigation. So carefully must the calculations and arrangements be made to run this bridge that only
191 daylight running is practicable, so that in all the thirty-five or thirty-six years since the construction of this bridge was begun and the piers placed in the river, this deponent has only run this bridge once in the night time, that time with a tow of only (12) pieces and under compulsion. This deponent has made between 300 and 400 trips by this bridge since its construction, the most of which trips were made when the boat would get to this stretch of the river near nightfall and the boat and tow would be tied up above this bridge waiting for daylight to run the bridge. This bridge is in a portion of the river seldom reached by the boats in the daylight run, and the boats will go to shore ten miles, 12 miles, fifteen miles, and up to twenty-four miles; that is, up as far as the foot as Brothers Island, some twenty-four miles above the site of the Parkersburg Bridge, seeking landings for the night, because this bridge is too dangerous to run at night and while many of these boats in turning out the next morning, on account of the great distance above the bridge, apparently reach the bridge in a daylight run it is only because they had to tie up so far above the bridge, and this deponent has thus tied up hundreds of times above this bridge waiting for daylight to run its narrow span and has only made the single trip mentioned at night. The largest vessels or steamboats in use on the Ohio River could handle tows containing from 500,000 to 750,000 bushels of coal if the river were not obstructed by bridge piers. This bridge could be made safer by removing the left-hand pier of the shore channel span, throwing the two spans into one, under such conditions, in this deponent's judgment, towboat men would not tie up above this bridge at night, but would keep on running, which would enable them to deliver their tow to its destination, and quite frequently avoid the necessity of laying up for low water before getting back to Pittsburg or getting back to Pittsburg in time to take another tow before the water should get too low.

The tows taken past the Parkersburg Bridge are first brought from Pittsburg to Bellaire, Ohio, two steamers bringing the tow intended for one steamer, because the Steubenville and Bellaire Bridges
192 have channel spans too narrow to be navigated safely through

in day light or night by a steamer with its full tow, otherwise the steamer would leave Pittsburg with the same tow it takes through the Parkersburg Bridge, and if all these bridges had channel spans sufficiently wide, the Ohio River tow boats would take larger tows than they now take.

DANL. MCINTYRE.

Sworn to and subscribed the day and year first above written.

[Notarial seal.] J. W. BARBER, *Notary Public.*

My commission expires Jan. 19, 1907.

AFFIDAVIT OF W. M. CROW.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

Before me, the subscriber, a notary public in and for said State and county, personally appeared W. M. Crow, who, being by me first duly sworn, deposes and says that he has been a mate on Ohio River steamers for eighteen years, and a master on steam vessels on the Ohio River for six years; that on the 15th day of December, 1899, he was a mate on the steamer "Ed. Roberts," of Pittsburg, Pa., when said steamer was descending the Ohio River with a tow of coal craft; and said tow hit the left hand pier of the channel span of the Parkersburg Bridge, of the B. & O. R. R. Company, across the Ohio River at Parkersburg, West Virginia, sinking two barges loaded with coal and resulting in a loss, as this affiant is informed, of thirty-three hundred and forty-six and 47/100 (3,346.47) dollars, which loss is given on page 3099 of the Report of the Chief of Engineers, in part 5, for 1900. Further this affiant is now master of the steamer "J. B. Finley," of Pittsburg, Pa., and has long been familiar with the conditions of navigation at the Parkersburg Bridge aforesaid, and in his opinion the channel span of this bridge is entirely too narrow to accommodate the commerce using the river at that point; that
193 the bridge as it stands is an unreasonable obstruction to navigation, and should be reconstructed, and the left hand pier of the channel span taken out entirely, throwing the channel span and the next adjacent to the left into one channel span; that within the last thirty years, since this affiant has been employed on vessels navigating the Ohio River, the number of loaded coal craft taken by a single steamer has increased from 100 to 300 per cent.

This affiant's father built the steamer "Fair Play," in 1866, and this affiant was employed on said vessel, and while the said Parkersburg Bridge was in course of construction the said steamer "Fair Play" hit the right hand channel pier of said bridge and sank a fuel flat; that the steamer "Fair Play" navigated the Ohio River about the time said bridge was constructed, and the said steamer towed five loaded barges of coal down stream, as a full sized tow, and the largest

tow taken by any steam vessel passed the site of this bridge when it was first constructed was ten barges, but owing to improved methods, a greater demand for fuel in the South, the capacity of the steamer "J. B. Finley," of which this affiant is at present master, could safely tow in this portion of the Ohio River, were there no bridges in the way, 750,000 bushels of coal, but, owing to the narrow span of this bridge, the tow of the steamer is much restricted in size and the steamer with a moderate sized tow can only navigate past this bridge in day light, and then with great risk of hitting one or the other of the piers of the bridge. This affiant has made many trips on towing steamers down the Ohio River, where the boat and tow reached that portion of the river in the night time, had to tie up and wait for day light to pass through the narrow span of the Parkersburg Bridge, thus causing a great loss of time and loss of money by reason of the delay, strain on the lines, and wear and tear occasioned by enforced tie-up, frequently with the river falling so rapidly that the steamer finds the water getting scant as the flood stage passes away, partially while so waiting.

W. M. Crow.

194 Sworn and subscribed before me, the 2nd day of November, A. D. 1904.

[Notarial seal.] J. Frank Tilley, *Notary Public.*

My commission expires Jan. 19, 1907.

AFFIDAVIT OF THOMAS MOREN.

(Filed November 30, 1904.)

State of Pennsylvania,
County of Allegheny, ss:

On this second day of November, A. D. 1904, before me, the subscriber, a notary public, in aforesaid county and State, personally appeared Thomas Moren, who, being by me first duly sworn, deposes and says that he resides in Pittsburgh, was a mate on steam vessels of the largest size navigating the Ohio River for 18 years, and for the past 5 years has been and is master of vessels of the same class; that he is thoroughly familiar with the conditions of navigation on the Ohio River in the vicinity of the Parkersbur' Bridge of the B. & O. R. R. Company, crossing the Ohio River at Parkersburg, West Virginia, and from this deponent's experience the Parkersburg Bridge is an unreasonable obstruction to navigation on account of the narrow channel span and the location of the bridge in a bend in the Ohio River, and in all this deponent's experience he only went through this bridge twice during the night, the span being so narrow that the risk of hitting one of the piers is so great that boats and tows almost invariably, unless under stress of circumstances such as ice, etc., tie up above this bridge at night waiting for daylight to run it. In

navigating the Ohio River with tows of coal the bends in the river are difficult to run unless there is plenty of room to get the boat and tow in shape beforehand. The Parkersburg Bridge being in one of these bends, there is no room to maneuver and there is always difficulty in keeping the boat and tow from hitting the bank in the bend below this bridge. Owing to improved methods and greater
195 demand for fuel in the last 23 years of this deponent's experience, very much larger tows are taken down the river than formerly, and the steamer "James Moren," of which this deponent is master, could safely tow down the Ohio river 500,000 bushels of coal if it were not for the restriction imposed by the narrow span of this bridge, and the steamer could also navigate at night instead of losing the time and money caused by enforced tie-ups above this bridge waiting for daylight to run it. In the fall of 1890 or 1891 this deponent was mate on the steamer "John Moren," of Pittsburg, Pa., when said steamer was descending the Ohio River with a tow of loaded coal barges; said steamer laid up four miles above the Parkersburg Bridge waiting for daylight to run the bridge, and started out the next morning, reaching the bridge about eight o'clock, but in spite of all the care taken the tow of said steamer collided with the left hand pier of the channel span of said bridge and sunk two barges of coal, causing a loss of about $4,800.00.

THOS. MOREN.

Sworn to and subscribed before me the day and year first above written.

[Notarial seal.] J. FRANK TILLEY, *Notary Public.*

My commission expires Jan. 19, 1907.

AFFIDAVIT OF CLIFFORD S. SIMS.

(Filed November 30, 1904.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES
vs.
THE PARKERSBURG BRANCH RAILROAD COMPANY ET AL.

CLIFFORD S. SIMS, being first duly sworn, deposes and says:

I am the general manager of the Baltimore and Ohio Railroad Company, and as general manager have charge of the operation of its railroad.
196

There are on the Baltimore and Ohio system 11,453 cars of one hundred thousand pounds capacity. The average weight of these cars is about eighteen tons, so that when loaded none of these cars can pass over the Parkersburg Bridge.

Of these cars about two thousand are box cars and flat cars and the balance are coal cars.

There is now being built one thousand cars of one hundred thousand pounds capacity, and there is under consideration the building of several thousand additional cars, all of which would be of one hundred thousand pounds capacity.

All coal cars which have been recently built for the company are of one hundred thousand pounds capacity, and all new coal cars which the company will have built will be of like capacity in weight.

The rule among all the railroads is to permit cars to be loaded ten per cent above their marked capacity, so that all one hundred thousand pound cars when fully loaded will weigh one hundred and ten thousand pounds in addition to the weight of the cars.

The Baltimore and Ohio Railroad Company has on its line a daily average of about twenty thousand foreign cars, of which a large proportion are one hundred thousand capacity, and the proportion of this class of cars is increasing each year, the tendency being to build all cars of one hundred thousand pounds capacity.

In a number of cases when freight is offered to us by foreign lines loaded in cars of one hundred thousand pounds capacity, we either have to transfer it to two cars of lighter capacity or refuse the freight, allowing it to be routed by some other line, or detour it via Bellaire.

There are on the Baltimore and Ohio Railroad 1,621 engines. Of these 488 are under one hundred and ten thousand pounds weight and 1,133 are over one hundred and ten thousand pounds weight.

197 On the Ohio division of the Baltimore and Ohio Southwestern there are 67 engines, of which 20 are under one hundred and ten thousand pounds weight and 47 are over that weight.

There are on the Parkersburg Branch Railroad 40 engines, of which 7 are under one hundred and ten thousands pounds and 33 are over one hundred and ten thousand pounds.

Engines weighing between 110,000 pounds and 121,000 pounds are limited as to speed in passing over this structure, and are required to move very slowly. Engines above 121,000 pounds are not allowed to pass over this structure. Nearly sixty per cent of all the engines in use can not pass over this bridge. All the engines now being built are too heavy for this bridge.

All spans of the Parkersburg Bridge, except the two channel spans, have been renewed so as to carry the heaviest equipment, and the renewal of the two channel spans is the only thing which prevents the use of the heaviest engines and the passage of the heaviest cars over the Baltimore and Ohio Railroad from eastern points to Cincinnati, St. Louis, and other western points.

CLIFFORD S. SIMS.

Subscribed and sworn to before me this twenty-ninth day of November, 1904.

[Notarial seal.] GEO. W. HAULENBEEK, *Notary Public.*

AFFIDAVIT OF GARRETT J. LYDECKER.

(Filed November 30, 1904.)

STATE OF OHIO,
County of Hamilton, ss:

On this day of November, A. D. 1904, before me, the subscriber, a notary public in and for said county and State, personally appeared Garrett J. Lydecker, who, being by me first duly sworn, deposes and says that he is a colonel of the Corps of Engineers of the United States Army, and is at present stationed at Cincinnati,
198 Ohio; that he has had charge of the Government improvements on the Ohio River as district and division engineer; and that he has been instructed by the Chief of Engineers, U. S. Army, to act for the Government in the suit brought against the Baltimore and Ohio Railroad Company in regard to their bridge over the Ohio River at Parkersburg, W. Va. Further, this affiant says that the following statement and exhibits thereto are derived from the files, records, drawings, prints, etc., etc., in the U. S. Engineer Office, Cincinnati, Ohio, and are true and accurate, to the best of his knowledge and belief.

(Statement.)

(At end.)

Sworn and subscribed before me, the day of November, A. D. 1904.

_____ _____,
Colonel, Corps of Engineers, U. S. Army.

_____ _____,
Notary Public.

(The bridge.)

The bridge over the Ohio River between Parkersburg, W. Va., and Belpre, Ohio, erected under an act to establish certain post roads, approved July 14, 1862, was completed and opened for travel in February, 1871. The bridge has two channel spans, each 349 feet long, with a width of waterway *or* 326.6 feet measured along the axis of the bridge in the plane of low water.

The channel piers, however, are not parallel to the current of the river, and this further reduces the available channel width of 318 feet. The railroad company owning the bridge secured permission from the Secretary of War, Jan. 15, 1901, to substitute certain new and stronger spans; under this permission 3 new spans were substituted and a fourth is now in process of erection. The company also desired to replace the two channel spans with two new spans of
199 a stronger and different type, but permission was refused by the Secretary of War because the bridge with its present narrow channel spans is inadequate to the needs of the commerce at pres-

ent transported on the Ohio River, which commerce now requires for safety, that the two channel spans be thrown into one main channel span with a width of 675.5 feet, measured along the axis of the bridge in the plane of low water.

(The river.)

The bridge is situated at Parkersburg, W. Va., and Belpre, Ohio, about 2,000 feet above the mouth of the Little Kanawha River. For about 2 miles above the bridge the river is comparatively straight; but at and below the bridge the river makes a sharp curve to the right of about 90 degrees in about 2,000 feet, thence another straight reach begins. It is the existence of this sharp bend that makes the passing of the bridge at present so dangerous that it is never run at night except under compulsion due to falling river, ice, etc. The immense fleets of coal boats and barges that are now brought down the river cover a great extent of water and when passing around a bend of the tow must be flanked around in order to prevent the end of the *two* from running ashore. At the site of the bridge the fleet must be maneuvered to prevent the striking of the channel piers. After the tow is straightened out for running these piers, it is almost impossible to properly flank around the bend that is immediately below the bridge.

(Commerce in general.)

Besides the great coal traffic along the Ohio River, a large amount of other commerce is transported. During the last fiscal year the commerce, in addition to coal shipments, amounted to 9,385,395 tons of freight and 4,286,031 passengers. The importance of the river as a transportation agency is thus evident. The same principle (i. e., that transportation facilities must keep pace with the advance of trade and manufacture), which is now operating to force the railroad company to provide a stronger bridge for the increased
200 loads passing over it, likewise operates in the demand for the river interests for a widening in the channel way to accommodate the increased loads passing under it.

(Growth of coal-fleet navigation.)

Since the rapid growth of manufact*u*ries throughout the Ohio and lower Missisippi Valleys there has been a constantly growing demand for coal. The very existence of these manufact*u*ries depend in no small measure upon cheap fuel. To meet this demand for coal and to reduce the cost of transportation to a minimum the system of coal-fleet navigation was evolved whereby great fleets of coal boats or barges are towed down the river by powerful steamboats built especially for that purpose. This demand for cheap fuel also had its effect in the beginning of the radical improvement of the river by the General Government.

In 1857, 5 years before the act under which the Parkersburg Bridge was built was passed, Mr. Roberts, the United States civil engineer in charge of the Ohio River, predicted:

"That the old fashion of conducting the coal business between the upper and lower Ohio and the Mississippi Valley will, from choice

and from economic motives, be entirely abandoned. Barges will be substituted for the frail arks which now not only never return, but in too many cases never reach their destination. Consequent upon this change the coal business will rapidly and largely increase beyond the calculation of the most sanguine."

In 1870, while the Parkersburg Bridge was still under construction, Mr. Roberts in a report said:

"Within the last ten or twelve years, since there has been any practical movement looking to the immediate radical improvement of the river, essential changes have taken place in the mode of using it. I allude now especially to the tow-boat system, under which a new class of numerous powerful steamers, running only during coal-boat freshets, has been introduced in connection with coal barges, which have been substituted for the old-fashioned frail coal boxes."

201 In the same year in which the bridge was completed the Board of Engineer Officers appointed to examine and report upon the bridges across the Ohio River, stated in reference to the Parkersburg Bridge that:

"The board have no change to recommend in this bridge, which, like the one at Bellaire, has been admirably built and with the most liberal care for the interest of navigation. It is a possibility that in the future it will be found that the main spans of these bridges are too narrow."

Although this statement of the bridge board was made 33 years ago, yet it shows that the possibility of the channel spans of the new bridge being too narrow in the future was plainly perceived and appreciated. The predictions of Mr. Milnor have been literally fulfilled and exhibit: First, that not only the coal industry itself, but also the inauguration of the fleet system of navigation preceded the completion of the bridge; that the immense coal traffic of the present day is not due to some transitory activity of the coal trade, but is the natural and stable growth of a great industry. The demand for increase of channel way under the Parkersburg Bridge thus is simply an effort to provide for the natural growth of this coal industry.

During the last 30 years the size of the tows themselves have steadily increased, keeping pace with the increased skill and knowledge of the river men, with the improvement in tow boat and barge construction, and with the betterment of the river channels. At the time the bridge was built an ordinary tow consisted of about 5 coal boats or 6 barges carrying from 75,000 to 105,000 bushels of coal, to-day the same size boat would tow 2 or more times the number of boats and carry from 2 to 3 times the amount of coal, while larger boats are bringing down more coal in the better and larger built boats.

The towboat Sprague recently took from Cairo to New Orleans a fleet of 58 coal boats and barges, containing over 1,400,000 bushels of

coal, weighing about 57,000 tons. This same tow, with th
202 first 12 boats omitted, was brought down the Ohio River from
Louisville to Cairo by the Sprague. However, it would b
impossible to transport such a tow on the upper Ohio on account o
the bridges with narrow spans.

To transport this great bulk of coal by railroad would take a trai
of 30-ton coal cars about 13 miles long, and the cost of the same woul
be out of all ordinary comparison.

The annual tonnage from Pittsburg is steadily increasing, and nov
amounts to between 3,000,000 and 2,000,000 tons.

(Losses due to Parkersburg Bridge.)

The loss to the river interests due to the narrow spans of thi
Parkersburg Bridge is not confined to the actual loss due to collis
ions, which now amounts to $111,748.47 as far as reported, but ther
is the additional loss of delay in waiting for daylight to run th
bridge or of the breaking up of the tow and passing the bridge b
" double tripping." The loss of a half a day may mean the failure o
the fleet to make the next pool below, may allow the water to ge
away, as is often the case in slight rises, and may prevent the un
loading and reshipment of the empty barges to Pittsburg before th
low water detains them in the lower river for four or five months
There is often the expense of a smaller towboat, which serves th
purpose of a helper in running the bridge.

AFFIDAVIT OF JOHN G. BRITTON.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 3rd day of November, A. D. 1904, before me, the subscriber
a notary public in and for said county and State, personally ap
peared Captain G. Brittain, who, being by me first duly sworn, de
poses and says that he resides in the borough of Brownsville, Penn
sylvania, and that he has been a master and pilot on the largest o
steam vessels navigating the Ohio River for twelve (12) years
203 and that he is thoroughly familiar with the conditions of navi
gation at the si*ght* of the Parkersburg Bridge of the Baltimore &
Ohio Railroad Company across the Ohio River at Parkersburg, Wes
Virginia, and in this deponent's experience and judgment said bridge i
an unreasonable obstruction to navigation by reason of its location a
a bend in the river and of the very narrow channel span. It is nec
essary in operating towboats with tows at this point to drive through
the bridge, and then the boat must work very hard to keep from
running into the shore in the bend below the bridge. And as th
towboats with large tows have to get into proper position a long
ways from any particular place which they have to run, the location
of this bridge so near the head of Blennerhassett Island is an added

hazard and difficulty. In all this deponent's boating experience in the time above stated he has never run this bridge but once at night, and this only when the boat had a small tow, he having made many trips where he had to lie above this bridge at night waiting for daylight to run the narrow and dangerous channel span. This bridge should be reconstructed by moving the left pier of the shore channel span, throwing the two spans into one. Even then there would be a hazard and danger running it at night, but the condition would be so much better that boats could get into better position to keep out of the bend below and pass Blennerhassett Island in safety.

JOHN G. BRITTON.

Sworn and subscribed before me the day and year above mentioned.
[Notarial seal.] W. L. FOULTZ, *Notary Public.*
My commission expires June 11, 1905.

AFFIDAVIT OF J. G. BEAZELL.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny:

On this 3rd day of November, A. D. 1904, before me, the
204 subscriber, a notary public in and for said county and State, personally appeared Captain J. G. Beazell, who, being by me first duly sworn, deposes and says that he resides in the borough of Munhall, Pennsylvania, and that he has been a master and pilot on the largest class of steam vessels navigating the Ohio River for ten (10) years, and that he is thoroughly familiar with the conditions of navigation at the s*ight* of the Parkersburg Bridge of the Baltimore & Ohio Railroad Company across the Ohio River at Parkersburg, West Virginia, and in this deponent's experience and judgment said bridge is an unreasonable obstruction to navigation by reason of its location at a bend in the river and of the very narrow channel span.

It is necessary in operating towboats with tows at this point to drive through the bridge, and then the boat must work very hard to keep from running into the shore in the bend below the bridge. And as towboats with large tows have to get into proper position a long ways from any particular place which they have to run, the location of this bridge so near the head of Blennerhasset Island is an added hazard and difficulty. In all this deponent's boating experience, in the time above stated, he has never run this bridge at night, but had to lie above this bridge on many trips waiting for daylight to run the narrow and dangerous channel span. This bridge should be reconstructed by moving the left-hand pier of the shore channel span,

throwing the two spans into one. Even then there would be a hazard and danger in running it at night, but the condition would be so much better and boats could get into better position to keep out of the bend below and pass Blennerhassett Island in safety.

JAS. G. BEAZELL.

Sworn and subscribed before me the day and year above mentioned.

[Notarial seal.] W. L. FOULTZ, *Notary Public.*

My commission expires June 11, 1905.

205 AFFIDAVIT OF S. J. RENO.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,

County of Allegheny, ss:

On this second day of November, before me, the subscriber, a notary public in and for said county and State, personally appeared S. J. Reno, who, on being by me first duly sworn, deposes and says that he resides in Pittsburg, Pa., and has been a pilot on steamers navigating the Ohio River for 35 years, has been a master for 29 years, and is a master and pilot at present on vessels of the larger class navigating said river, that he is thoroughly familiar with the conditions of navigation at the site of the Parkersbur' Bridge of the Baltimore & Ohio R. R. Co. across the Ohio River at Parkersburg, W. Va., and that said bridge is an unreasonable obstruction to navigation by reason of its location and its narrow span, that this deponent is at present master of the str. "Pacific No. 2," of Pittsburg, Pa., which steamer and tow will measure about 830 feet in length over all, and about 140 feet in width with the tow taken by said bridge, that in all this deponent's experience covering hundreds of trips, making ten to twenty trips a year, this deponent has only run this bridge three or four times at night, and then only under the greatest necessity when it was impossible to land above the bridge, that this bridge is extra hazardous because the towboat with its heavy tow must drive into the channel span of this bridge, and then after passing the bridge is thrown into the bend below and invariably has to work very hard to keep from hitting the shore in the bend below, that this deponent has seen steamers begin to back while in the span of this bridge and then find it impossible to keep from hitting the shore below, that owing to the powerful steamers now used on the Ohio River, the improvements of all kinds and the great demand for fuel at river points below, the tows have increased in size from 100% to 300%, according to the size of the boat, and larger tows could be safely taken if there were no bridge piers
206 in the way that the channel span should be reconstructed by

removing the left hand pier of the Parkersburg Bridge channel span and throwing the two spans into one.

SAM J. RENO.

Sworn to and subscribed the day and year first above written.
[Notarial seal.]

J. W. BARBER,
Notary Public.

My commission expires Jan. 19, 1907.

AFFIDAVIT OF H. W. FAIRFIELD.

(Filed November 30, 1904.)

STATE OF PENNSYLVANIA,
County of Allegheny, ss:

On this 3rd day of November, A. D. 1904, before me, the subscriber, a notary public in and for said county and State, personally appeared Captain H. W. Fairfield, who, being by me first duly sworn, deposes and says that he resides in the city of Pittsburgh, Pennsylvania, and that he has been a master and pilot of the largest class steam vessels navigating the Ohio River for twenty (20) years, and that he is thoroughly familiar with conditions of navigation at the sight of the Parkersburg bridge of the Baltimore & Ohio Railroad Company across the Ohio River at Parkersburg, West Virginia, and in this deponent's experience and judgment said bridge is an unreasonable obstruction to navigation by reason of its location at a bend in the river and of the very narrow channel span. It is necessary in operating towboats with tows at this point to drive through the bridge, and then the boat must work very hard to keep from running into the shore in the bend below the bridge, and as towboats with large tows have to get into proper position a long ways from any particular place which they have to run the location of this bridge so near the head of Blennerhassett Island is an added hazard and difficulty. In all this deponent's boating experience in the time above stated he has never run this bridge but once at night, and this only when a landing could not be made on account of ice in the
207 river, and has made more than a hundred trips where he had to lie above this bridge at night waiting for daylight to run the narrow and dangerous channel span. This bridge should be reconstructed by removing the left-hand pier of the shore channel span, throwing the two spans into one. Even then there would be a hazard and danger running it at night, but the conditions would be so much better that boats could get into better position to keep out of the bend below and pass Blennerhassett Island in safety.

H. W. FAIRFIELD.

Sworn and subscribed before me the day and year above mentioned.
[Notarial seal.]

W. L. FOULTZ,
Notary Public.

My commission expires June 11, 1905.

OPINION.

In the Circuit Court of the United States for the Northern District of West Virginia, at Parkersburg.

THE UNITED STATES *vs.* THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation; Baltimore & Ohio Railroad Company, a corporation; and John W. Davis, receiver.	In Equity.

For complainant: Hon. Reese Blizzard, U. S. district attorney, Parkersburg, W. Va.

For defendants: Hon. Hugh L. Bond, jr., Baltimore, Md.

Filed February 4th, 1905.

JACKSON, D. J.:

The United States filed their bill in this court against the Baltimore & Ohio Railroad Company and the Parkersburg Branch Railroad Company, operated by the said Baltimore & Ohio Railroad Company, and John W. Davis, receiver of the Parkersburg Branch Railroad Company, alleging that the bridge across the Ohio
208 River at Parkersburg is an obstruction to navigation at that point and a great injury to the commerce of the Ohio River. The allegations of the bill are supported by sundry affidavits, some fifteen in number. The prayer of the bill is for an injunction to restrain and enjoin the defendants, their agents, and all others acting under them, from constructing or proceeding to construct "the contemplated bridge across the Ohio River between Parkersburg and Belpre." To this bill the defendant companies have filed their answer, claiming that, under an act of Congress passed and approved July 14, 1862, they were authorized to build and construct said bridge subject to the terms and limitations as expressed in the act. The answer of the defendant companies alleges that a bridge was not only built and constructed in compliance with the terms and provisions of the act, but that the defendant companies did more than they were required to do—in building and constructing two channel spans instead of one and giving greater space of waterway between the stone piers for navigation than was required by the act.

It may be conceded, and I suppose it is true, that the piers upon which the superstructure of the bridge rests are at times, especially in high flood tide, to some extent, obstructions to navigation. It does not appear that they are serious obstructions in an ordinary stage of water in the river. Assuming that navigation is more or less obstructed at times, the question for the consideration of the court is, what, if any, remedy exists.

In the outset of the case it cannot be denied that a bridge was built in pursuance of the act of Congress; it is not contended that the companies have not fully complied with the terms and provisions of the act of 1862, under which the bridge was constructed. By an act of Congress, passed in J'ly, 1872, 16 Stat., p. 240, section 5, the

Secretary of War was required to detail three engineers to examine the bridges across the Ohio River, and, amongst other requirements, to report whether any of them interfered with free and safe
209 navigation. In pursuance of that act the chief engineer detailed three distinguished engineers, who made and submitted to him a report which he afterwards sent to Congress. In this report the engineers found no cause to criticize the company in the construction of this bridge, but stated in their report, as the law required only one channel space of three hundred feet, that "the bridge companies are deserving of very great credit, not only in providing two spans instead of one, but in making each space between the piers eighteen feet wider than was required by law for the widest space."

This report of the engineers established the fact that the bridge was built and constructed in full compliance with the act of Congress which authorized its erection. It would seem from this report that the Government was estopped from denying that the bridge was built in compliance with the act of 1862, and that it is, therefore, a lawful structure. We are, therefore, confronted with the question whether it can be removed upon the alleged ground "that it is a serious obstruction to navigation." We answer "Yes," but it must be removed by the same power that granted it. Congress alone, in the exercise of its sovereign power, can remove the bridge, but it must be upon terms that are just and right to the owners of it. While, under our laws, private property can be taken by a sovereign when the public good requires it, yet it must be done upon just compensation. This bridge is the private property of the defendant companies; they built it at their own cost and expense, and upon the assurance that when they did so, under the act of Congress, they had acquired a vested right of a permanent character.

It is claimed, however, that the act of Congress passed December 18, 1872, 17 Stat., p. 398, superseded the act of 1862; but this act, passed subsequent to the act of 1862, as well as all the subsequent acts, cannot deprive railroad companies of their franchises acquired under the act of 1862.

In the act of 1862 there is no right reserved to alter or amend it. It appears that every limitation or restriction in the act was fully complied with in the erection of the bridge. The act of 1872 is
210 not retroactive but prospective, and was the first act in which Congress reserved to itself the right to alter or amend the acts, which reservation is found in subsequent acts relating to the bridges across the Ohio River. It is evident that Congress did not suppose, when it passed that act, that it had the right to require any change in bridges constructed under it; the seventh section of the acts of 1872, which was the first act following the act of 1862, expressly reserved the right to alter or amend that act as to the future construction of bridges, so as to prevent or remove all obstructions to navigation, but this reservation applied only to that act, and there was no attempt on the part of Congress to repeal in express terms

the act of 1862, if, indeed, such a power be conceded, except upon the terms of just compensation. The same criticism is applicable to the subsequent acts of 1883 and 1890. It will be observed that the act of 1872 and all subsequent acts are prospective in their character, and do not in any way affect the rights of any of the parties who built bridges under the act of 1862.

While Congress would, as we have said, in the exercise of its sovereign power, have the right to destroy and remove this bridge, still it has now no power to delegate that right; if it attempts to exercise the power it must be done with a due regard for the rights of the owners of the bridge. When Congress passed the act of 1862, she said to any and all persons that the Ohio River might be bridged under the terms and provisions of the act. Therefore, when the defendant companies, in pursuance of that act, erected the bridge complained of, according to its terms and provisions, their rights became vested, of which rights Congress only could deprive them upon terms of just and equitable compensation. The bridge being private property could not be taken for public use except upon indemnifying the owners for its value. The acceptance of the act of 1862 by the defendant companies, and the erection of the bridge under it became in law a binding contract between the parties which this court
211 must recognize and enforce. To hold otherwise, in the view this court takes of this case, would be unconstitutional, and "impairing the obligation of contracts." 135 U. S., 682. It is claimed, however, that the act of 1862 was merely a license to any one who wished to avail himself of the grant it contains upon complying with its terms and provisions. I cannot concur in this position. The United States, in their sovereign capacity, passed this act, which was a grant of power to the defendant companies for the benefit of the public and to promote interstate commerce, and so long as the property is used for the benefit of the public the court must protect the right of the defendant companies. Of course it follows that when the bridge ceases to be used for the benefit of the public the power exists to revoke the grant.

The court is asked to award its restraining order and enjoin the defendants and their agents from constructing or proceeding to construct the contemplated bridge across the Ohio River between Parkersburg and Belpre. The answer denies that they are constructing a new bridge across the river, but that the defendant companies are merely rebuilding the superstructure on the present piers and abutments without alteration.

This is shown to be the fact by the evidence filed in the case. Under the bill, answer, and exhibits in the case it does not appear that the defendant companies are building a new bridge, nor does it appear that the new superstructure affects or impedes navigation. When the new superstructure is placed in position it will rest on the same piers upon which the present superstructure rests. What would a restraining order, if granted, accomplish? Certainly it cannot be said that the present superstructure in any respect interferes with the

ordinary navigation of the river. The granting of application for an injunction will not remove the piers in the river or the present superstructure on the piers, nor does it appear from the evidence that the new superstructure will interfere more with the navigation of the river than the present superstructure. Certainly the right to repair the bridge, to alter it or to improve it, for the safety of the public is incident to the power to built it.

212 It must appear, from what we have said, that an injunction furnishes no remedy for the grievances complained of in the bill. This is the third application that has been made for an injunction before the judges of this court against the Baltimore & Ohio Railroad Company involving the act of 1862. Judge Goff heard the case of the United States against the Baltimore & Ohio Railroad Company, which was an application for an injunction to prevent reconstruction of the Benwood Bridge. He dismissed the bill on March 27, 1900. Judge Goff and I heard the case of the Baltimore & Ohio Railroad Company against Leidecker, one of the United States engineers, in which the same question was involved, in which, upon a review of the case decided by Judge Goff, as well as the case then under consideration, we reached the conclusion that the United States could not interfere with the reconstruction of the superstructure of the bridge which was built under the act of 1862. And now we have this application, which I have under consideration, involving the same question. It would seem to me that the action of the court heretofore had in previous cases should be adhered to in this case. In all the cases the judges of this court, either sitting alone or together, have reached the conclusion that the act of 1872 and those acts subsequent thereto do not in anywise affect the rights of the Baltimore & Ohio Railroad Company in relation to any and all of the bridges built under the act of 1862.

For the reasons assigned, the court is of the opinion to refuse the injunction in this case, and suggests that the only remedy is to apply to Congress for an act to remove the bridge, if it is such an obstruction to navigation as to justify their action, upon such terms and conditions that the Baltimore & Ohio Railroad Company should receive compensation for the destruction of the bridge.

Motion for injunction is refused.

213 FINAL DECREE.

And at another day, to wit, on the 27th day of February, 1905, the following order was made and entered of record, to wit:

THE UNITED STATES *vs.* THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation, JOHN W. DAVIS, receiver, and the BALTIMORE & OHIO RAILROAD COMPANY, a corporation.	In Equity.

This cause came on this 30th day of November, 1904, to be further heard upon the plaintiff's bill, and upon the appearance and answer

of each of the defendants thereto, and upon the former orders and decreed herein, and upon the following affidavits filed upon behalf of the plaintiff: Affidavit of John E. Greiner, F. A. Gould, John M. Dippold, A. O. Ackard, D. A. Woodyard, Hames H. Morris, J. A. Woodyard, Thomas O. Dunlevy, W. R. Reno, Daniel McIntire, W. M. Crow, and Thomas Moren; and upon the following affidavits filed upon behalf of each of the defendants: Clifford S. Sims, Garret J. Lydecker, John G. Britton, J. G. Beazell, S. J. Reno, and H. W. Fairfield; and upon motion of the plaintiff for a permanent injunction as prayed for in the bill, and their appearance thereto by Hugh L. Bond, attorney for each of the defendants, and was duly argued by counsel for the plaintiff and each of the defendants, and being duly considered the court is of opinion to, and doth, refuse and disallow the plaintiff's motion for a permanent injunction, for the reasons set forth in the written opinion of the court, filed herein on the 4th day of February, 1905, and ordered to be made part of the record.

And now on this 27th day of February, 1905, the court directs to be entered of record the foregoing decree and orders that the same take effect as of this date.

214 PETITION FOR, AND ALLOWANCE OF, APPEAL.

(Filed and entered March 14, 1905.)

And at another day, to wit: On the 14th day of March, 1905, the following order was made and entered of record, to wit:

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES *vs.* THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation organized and doing business under the laws of the State of West Virginia; JOHN W. DAVIS, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland.	In Chancery.

To the Circuit Court of Appeals for the Northern District of West Virginia:

And now comes the United States of America, plaintiff herein, by Reese Blizzard, United States attorney for the Northern District of West Virginia, duly authorized to appear in this behalf by the Attorney General of the United States, and conceiving itself to be aggrieved by the decree made and entered on the 27th day of February, 1905, in the above-entitled cause, does hereby appeal from the said order and decree to the United States Circuit Court of Appeals

for the Fourth Circuit, for the reasons specified in the assignment of error, which is filed herewith; and he prays that this appeal may be allowed, and that a transcript of the record, proceedings, and papers upon which said order and decree were made, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Fourth Circuit.

UNITED STATES OF AMERICA,
By REESE BLIZZARD,
Attorney for Plaintiff.

215 The foregoing claim of appeal is allowed.

J. J. JACSON, *Judge D. C. U. S., N. D. W. Va.*

MARCH 14, 1905.

ASSIGNMENT OF ERRORS.

(Filed March 14, 1905.)

In the Circuit Court of the United States for the Northern District of West Virginia.

THE UNITED STATES
vs.
THE PARKERSBURG BRANCH RAILROAD COMPANY, a corporation organized and doing business under the laws of the State of West Virginia; John W. Davis, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland. } In Equity.

To the Circuit Court of Appeals for the Northern District of West Virginia:

And now on the 14th day of March, 1905, comes the said plaintiff, the United States of America, by Reese Blizzard, United States attorney for the Northern District of West Virginia, duly authorized to appear in this behalf by the Attorney General of the United States, and says:

That the decree entered in said cause is erroneous and against the just rights of the said plaintiff for the following reasons:

First. Because the court erred in overruling and denying the motion of the plaintiff to grant the permanent injunction prayed for by the plaintiff's bill, and heard on the 30th day of November, 1904.

Second. Because the evidence showed that the said bridge was a serious and unreasonable obstruction to the navigation of the Ohio River, a navigable river of the United States.

216. Third. Because the court erred in entering the order entered by it of record in the said cause on the 27th day of February, 1905.

Wherefore the said plaintiff prays that the said decree be reversed and that the said court may be directed to enter a decree in accordance with the prayer of the bill.

UNITED STATES OF AMERICA,
By REESE BLIZZARD,
Attorney for Plaintiff.

CITATION.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to the Parkersburg Branch Railroad Company, a corporation organized and doing business under the laws of the State of West Virginia; John W. Davis, receiver; the Baltimore & Ohio Railroad Company, a corporation organized and doing business under the laws of the State of Maryland, greeting:

You are hereby cited and admonished to be and appear at a United States Circuit Court of Appeals for the fourth circuit to be holden at Richmond on the 13th day of April next, pursuant to an appeal from a decree of the Circuit Court of the United States for the Northern District of West Virginia, in your favor passed in a cause in said court, wherein the United States is plaintiff and you are defendants, to show cause, if any there be, why the decree rendered against the said plaintiff in said cause mentioned should not be corrected, and why speedy justice should nat be done to the parties in that behalf.

Witness, the Honorable Melville W. Fuller, Chief Justice of the United States, this 14th day of March, in the year of our Lord one thousand nine hundred and five.

[SEAL.]

J. J. JACKSON,
Judge D. C. U. S., N. D. W. Va.

I accept service of the within citation this 14th day of March, 1905.

JOHN W. DAVIS,
Receiver Parkersburg Branch Railroad Co.

217 I accept service of same for Parkersburg Branch Railroad Company & the Baltimore & Ohio Railroad Company.

J. BASSEL, *Counsel.*

March 14, 1905.

CLERK'S CERTIFICATE.

UNITED STATES OF AMERICA,
Northern District of West Virginia, to wit:

I, L. B. Dellicker, clerk of the Circuit Court of the United States for the Northern District of West Virginia, hereby certify that the foregoing is a true and complete transcript of the record and proceed-

ings of said court in the equity cause of the United States vs. Parkersburg Branch Railroad Company et al., lately pending in said court, as the same appear on file and among the records of my said office.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at Parkersburg, in said district, this 31st day of March, A. D. 1905.

[Seal of the court.]

L. B. DELLICKER,
Clerk C. C. U. S., N. D. W. Va.

218

EXHIBIT B.

(With bill of exception.)

UNITED STATES OF AMERICA, *ss:*

[SEAL.] *The President of the United States of America to the honorable judges of the Circuit Court of the United States for the Northern District of West Virginia, Greeting:*

Whereas, lately in the Circuit Court of the United States for the Northern District of West Virginia, before you, or some of you, in a cause between the United States, complainant, and the Parkersburg Branch Railroad Company, John W. Davis, receiver, and the Baltimore and Ohio Railroad Company, defendants, wherein the decree of the said Circuit Court entered in the said cause on the 27th day of February, 1905, is in the words following, to wit:

"This cause came on this 30th day of November, 1904, to be further heard upon the plaintiff's bill, and upon the appearance and answer of each of the defendants thereto, and upon the former orders and decree*d* herein, and upon the following affidavits filed upon behalf of the plaintiff: Affidavit of John E. Greiner, F. A. Gould, John M. Dippold, A. O. Ackard, D. A. Woodyard, James H. Morris, J. A. Woodyard, Thomas P. Dunlevy, W. R. Reno, Daniel McIntire, W. M. Crow, and Thomas Moren; and upon the following affidavits filed upon behalf of each of the defendants: Clifford S. Sims, Garret J. Lydecker, John G. Britton, J. G. Beazell, S. J. Reno, and H. W. Fairfield; and upon motion of the plaintiff for a permanent injunction as prayed for in the bill, and their appearance thereto by Hugh L. Bond, attorney for each of the defendants, and was duly argued by counsel for the plaintiff and each of the defendants, and being duly considered, the court is of opinion to, and doth refuse and disallow the plaintiff's motion for a permanent injunction for the
219 reasons set forth in the written opinion of the court, filed herein on the 4th day of February, 1905, and ordered to be made part of the record.

"And now on this 27th day of February, 1905, the court directs to be entered of record the foregoing decree and orders that the same take effect as of this date."

as by inspection of the transcript of the record of the said Circuit Court, which was brought into the United States Circuit Court of

Appeals for the Fourth Circuit by virtue of the appeal of the sai
United States, agreeably to the act of Congress, in such case mad
and provided, fully and at large appears.

And whereas, in the term of November, in the year of our Lor
one thousand nine hundred and five, the said cause came on to b
heard before the said United States Circuit Court of Appeals for th
Fourth Circuit, on the said transcript of record, and was argued b
counsel;

On consideration whereof, it is now here ordered, adjudged, an
decreed by this court that the decree of the said Circuit Court, i
this cause, be, and the same is hereby, affirmed.

J. C. PRITCHARD, *Circuit Judge.*

Feb. 10th, 1906.

You, therefore, are hereby commanded that such further proceed
ings be had in said cause, as according to right and justice and th
laws of the United States, ought to be had, the said appeal notwith
standing.

Witness the Honorable Melville W. Fuller, Chief Justice of th
United States, the third day of March, in the year of our Lord on
thousand nine hundred and six.

HENRY T. MELONEY,
Clerk of the U. S. Circuit Court of
Appeals for the Fourth Circuit.

No costs adjudged.

220 PETITION FOR WRIT OF ERROR.

(Filed July 16, 1910.)

In the Circuit Court of the United States for the Northern Distri
of West Virginia.

UNITED STATES OF AMERICA, PLAINTIFF,
vs.
BALTIMORE & OHIO RAILROAD COMPANY,
a corporation, defendant.

Upon indictment for violation of act of March 3, 1899, in refusin
to alter the bridge across the Ohio River, conforming with the re
ommendation made by the Secretary of War.

To the Honorable Alston G. Dayton, Judge of the United Stat
District Court for the Northern District of West Virginia:

Now comes the above named plaintiff, the United States of Americ
by the United States attorney, and complains that in the recor
and proceedings had in said cause and the trial thereof, and also i
the rendition of the judgment in the above-entitled cause, in sai
United States Circuit Court for the Northern District of West Vi

ginia, at the June term thereof, 1910, against the plaintiff, the United States of America, on the 16th day of June, 1910, manifest error hath happened to the great damage of the said United States of America.

Wherefore, said United States of America prays for the allowance of a writ of error, and for such orders and process as may cause the same to be corrected by the Supreme Court of the United States.

Dated this the 12th day of July, A. D. 1910.

UNITED STATES OF AMERICA,
By H. ROY WAUGH, *United States Attorney.*

221

ASSIGNMENTS OF ERROR.

(Filed July 16, 1910.)

In the United States Circuit Court for the Northern District of West Virginia.

UNITED STATES OF AMERICA, PLAINTIFF,
vs.
BALTIMORE & OHIO RAILROAD COMPANY, a corporation, defendant. | Assignment of errors.

Now comes the plaintiff, the United States of America, by its attorney, and files the following assignment of errors, which said plaintiff will rely upon in the prosecution of the writ of error in the above entitled cause from the judgment of this honorable court pronounced on the 16th day of June, 1910, in said cause.

1. That the United States Circuit Court in and for the Northern District of West Virginia erred in overruling the objection of counsel for plaintiff in error to the introduction in evidence at the trial of said cause of the transcript of the record in the equity cause of the United States vs. the Parkersburg Branch Railroad Company, which is case #601 in the Circuit Court of Appeals, Fourth Circuit, and in admitting the same in evidence.

2. That the said court erred in overruling the objection of counsel for plaintiff in error to the introduction in evidence at the trial of said cause of the mandate of the United States Circuit Court of Appeals, Fourth Circuit, in case #601, in said Circuit Court of Appeals, to wit, the equity case of United States vs. The Parkersburg Branch Railroad Company, and in admitting the same in evidence.

3. That the said court erred in sustaining the motion of the defendant to direct a verdict by the jury of not guilty, and in directing the said verdict.

222 4. That the said court erred in its statement of the law in the opinion rendered by it in granting the motion to direct a verdict of not guilty and in its charge to the jury.

5. That the said court erred in its opinion and charge to the jury in the following statement of the law: "By it (meaning the final

decree in the equity cause of United States vs. The Parkersburg Branch Railroad Company) the legal and vested right to maintain this bridge in its present condition has been judicially determined by courts of competent jurisdiction. No matter how erroneous the decisions of these courts may have been as disclosed by subsequent decisions of the Supreme Court in other cases involving like principles and facts, nevertheless such decision stands unreversed in this case and must therefore remain the law of it, and as to this particular bridge and at least as between the same parties be upheld and enforced. Therefore if, by it, the defendant has a legal right to maintain this bridge in its present condition it can not be prosecuted for doing it."

6. That the said court erred in its opinion and charge to the jury in the following statement of law: "Here the Government has completely tied its hands by invoking a court of equity to exercise its plenary power to adjust its rights in the premises, and by that court's decree standing as it does, unreversed and in full force."

7. That the said court erred in its statement of law in its opinion and charge to the jury, which statement is as follows: "The bridge in this case was erected under and by virtue of an act of Congress in the exercise of its supreme right to regulate such erections across navigable streams and its erections, as made, was fully and without qualification approved by the Government agents and engineers as complying in all respects with the act of Congress authorizing
223 its erection. The right of Congress by subsequent act to enforce other and different conditions calculated to destroy the vested right of the defendant in the premises without compensation, does not, in my judgment, exist."

8. That the said court erred in the statement of law in its opinion and charge to the jury, which statement is as follows: "The power to thus regulate commerce between the States by Congress is equal to its power to regulate navigation of navigable waters. Neither power is either superior to or greater than the other. Having therefore regulated the erection of this bridge by this interstate commerce carrier for the purposes of interstate commerce it seems to me it will not be permitted to abate and destroy this means of interstate commerce in the exercise of its right to regulate navigation. I say 'to abate and destroy' because the right is not yet vested in Congress to do more than this. It cannot compel the defendant to rebuild its bridge in accord with its wishes and that of the rivermen, but can only in any event require it to break and destroy its interstate connection and thereby cease its interstate commerce carrying in this particular."

9. That the said court erred in overruling the motion made by counsel for the plaintiff in error to set aside the verdict of the jury and grant a new trial.

10. That the said court committed other errors in the trial of said cause apparent on the face of the record.

Wherefore, the said United States of America, plaintiff below, and plaintiff in error, prays that the judgment of the said United States Circuit Court for the Northern District of West Virginia be reversed, etc.

UNITED STATES OF AMERICA,
By H. ROY WAUGH, *United States Attorney.*

224 ORDER ALLOWING WRIT OF ERROR.

And at another day, to wit, on the 16th day of July, 1910, the following order was made and entered of record, to wit:

THE UNITED STATES *v.* BALTIMORE & OHIO RAILROAD COMPANY, a corporation, defendant.	Upon an indictment for violation of act of March 3, 1899. No. 3491.

This day came the district attorney of the United States and presented to the court the petition of said plaintiff for a writ of error in this cause, accompanied by its assignments of error, which, being seen and inspected by the court, are ordered to be filed.

Upon consideration whereof, it is ordered that a writ of error be allowed said plaintiff to the Supreme Court of the United States, and that the clerk of this court do make and certify to said Supreme Court a transcript of the record in this cause, and it is further ordered that citation herein do forthwith issue.

225 WRIT OF ERROR.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to the honorable the judges of the Circuit Court of the United States for the Northern District of West Virginia, greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said Circuit Court, before you, or some of you, between the United States of America, plaintiff, and the Baltimore & Ohio Railroad Company, a corporation, defendant, a manifest error hath happened, to the great damage of the said the United States of America, as by its complaint appears. We being willing that error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same at Washington, D. C., on the 15th day of August, next, in the said Supreme Court of the United States, to be then and there held, that

the record and proceedings aforesaid being inspected, the said Supreme Court of the United States may cause further to be done therein to correct that error, what of right, and according to the laws and customs of the United States should be done.

Witness the Honorable John M. Harlan, Associate Justice of the United States, taking precedence in the vacancy existing in the Chief Justiceship, this 16th day of July, in the year of our Lord one thousand nine hundred and ten.

[SEAL.] S. R. HARRISON,
Clerk of the Circuit Court of the United States for the Northern District of West Virginia.

Allowed by—

ALSTON G. DAYTON,
U. S. Dist. Judge, N. D. of W. Va.

226 CITATION.

UNITED STATES OF AMERICA, *ss:*

The President of the United States, to The Baltimore & Ohio Railroad Company, a corporation, greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, to be holden at Washington, D. C., on the 15th day of August, 1910, pursuant to a writ of error filed in the clerk's office of the Circuit Court of the United States for the Northern District of West Virginia, wherein The United States of America is plaintiff in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error, as in the said writ of error mentioned, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the honorable John M. Harlan, Associate Justice of the United States, taking precedence in the vacancy existing in the Chief Justiceship, this 16th day of July, in the year of our Lord one thousand nine hundred and ten.

[SEAL.] ALSTON G. DAYTON,
U. S. Dist. Judge, N. D. W. Va.

227 CLERK'S CERTIFICATE.

UNITED STATES OF AMERICA,
Northern District of West Virginia, ss:

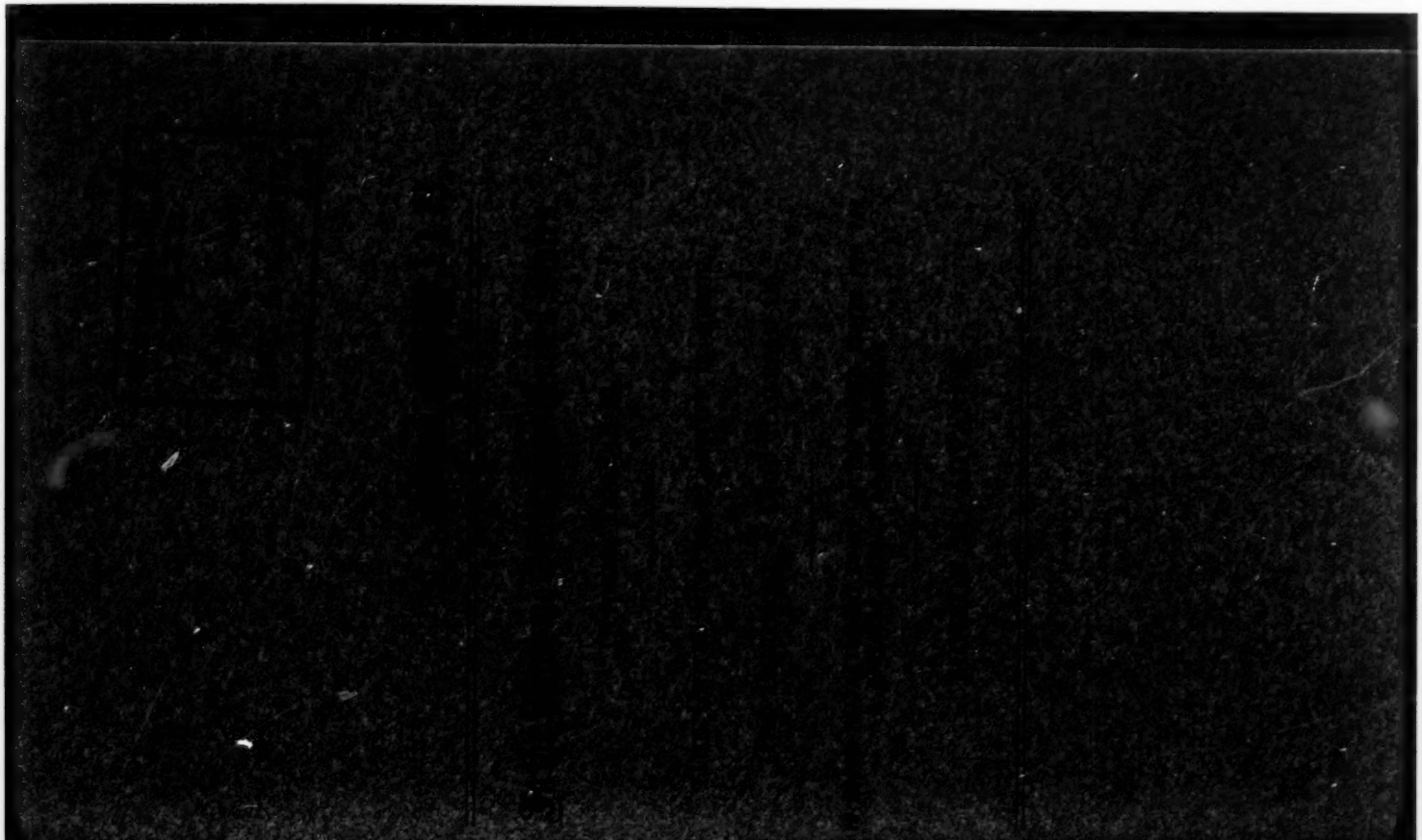
I, S. R. Harrison, clerk of the Circuit Court of the United States for the Northern District of West Virginia, do certify that the foregoing is a true and complete transcript of the record and proceedings of said court in the matter of The United States v. The Baltimore & Ohio Railroad Company, a corporation, upon indictment for viola-

tion of act of March 3, 1899, lately pending in said court, as the same appear on file and among the records of my said office.

In testimony whereof, I have hereunto set my hand and affixed the seal of said court, at Parkersburg, in said district, this 30th day of July, 1910.

[SEAL.] S. R. HARRISON, *Clerk.*

(Indorsement on cover:) File No., 22291. N. West Virginia C. C. U. S. Term No., 670. The United States, Plaintiff in Error, vs. The Baltimore & Ohio Railroad Company. Filed August 9th, 1910. File No., 22291.



In the Supreme Court of the United States.

OCTOBER TERM, 1910.

THE UNITED STATES, PLAINTIFF IN ERROR,
v.
THE BALTIMORE & OHIO RAILROAD CO. } No. 670.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF WEST VIRGINIA.

MOTION TO ADVANCE.

Comes now the Solicitor General, on behalf of the United States, and moves the court to advance the above-entitled cause, and respectfully suggests that the same be set down for hearing on or about December 1 next.

This is an indictment against the Baltimore & Ohio Railroad Co. for failing to alter its bridge across the Ohio River at Parkersburg, W. Va., in accordance with the lawful order of the Secretary of War, made pursuant to section 18 of the river and harbor act of March 3, 1899 (30 Stat., 1121, 1153), which provides:

> SEC. 18. That whenever the Secretary of War shall have good reason to believe that any railroad or other bridge now constructed,

or which may hereafter be constructed, over any of the navigable waterways of the United States is an unreasonable obstruction to the free navigation of such waters on account of insufficient height, width of span, or otherwise, or where there is difficulty in passing the draw opening or the draw span of such bridge by rafts, steamboats, or other water craft, it shall be the duty of the said Secretary, first giving the parties reasonable opportunity to be heard, to give notice to the persons or corporations owning or controlling such bridge so to alter the same as to render navigation through or under it reasonably free, easy, and unobstructed; and in giving such notice he shall specify the changes recommended by the Chief of Engineers that are required to be made, and shall prescribe in each case a reasonable time in which to make them. If at the end of such time the alteration has not been made, the Secretary of War shall forthwith notify the United States district attorney for the district in which such bridge is situated, to the end that the criminal proceedings hereinafter mentioned may be taken. If the persons, corporation, or association owning or controlling any railroad or other bridge shall, after receiving notice to that effect, as hereinbefore required, from the Secretary of War, and within the time prescribed by him, willfully fail or refuse to remove the same or to comply with the lawful order of the Secretary of War in the premises, such persons, corporation, or association shall be deemed guilty of a misdemeanor, and on con-

viction thereof shall be punished by a fine not exceeding five thousand dollars; and every month such persons, corporation, or association shall remain in default in respect to the removal or alteration of such bridge shall be deemed a new offense, and subject the persons, corporation, or association so offending to the penalties above prescribed: *Provided*, That in any case arising under the provisions of this section an appeal or writ of error may be taken from the district courts or from the existing circuit courts direct to the Supreme Court, either by the United States or by the defendants.

The Parkersburg bridge was constructed under authority of the act of Congress of July 14, 1862, chap. 167 (12 Stat., 569), in which Congress did not *expressly* reserve power to alter or amend the act so as to require the alteration of the bridge in the event it should become a material obstruction to the navigation of the river.

In *United States* v. *Parkersburg Branch Railroad Co.* (143 Fed., 224), which was a suit by the Government to restrain the renewal of the superstructure of the bridge here in question, the Circuit Court of Appeals for the Fourth Circuit, although that question was not really involved, held that the subsequent legislation of Congress conferring power upon the Secretary of War to require the alteration of bridges across the navigable waterways of the United States, including section 18 of the act of March 3, 1899, was inapplicable to bridges con-

structed under authority of the act of July 14, 1862. Referring to the fact that the act of 1862 contained no reservation of the right of the Government to amend or repeal the same, that court said that "under it the owners of the bridge were vested with a permanent franchise the moment they complied with its terms, and it is therefore property of which they can not be divested without due process of law and just compensation."

After that decision the Secretary of War, proceeding under section 18 of the act of March 3, 1899, directed the alteration of the bridge in question to meet the needs of navigation, and upon the failure of the Baltimore & Ohio Railroad Co. to obey that order, which it was admitted was duly issued and served, these proceedings were instituted.

It appears from the record that the cost of altering the Parkersburg bridge in compliance with the order of the Secretary of War will exceed $500,000.

The Circuit Court held that the decision of the Circuit Court of Appeals in the case of the *Parkersburg Branch Railroad Co.*, above cited, was conclusive of the questions involved in this case, and directed a verdict for the defendants. It distinguished the decisions of this court in *Union Bridge Co.* v. *United States* (204 U. S., 364) and *Monongahela Bridge Co.* v. *United States* (216 U. S., 177) upon the ground that the bridges there referred to had been erected under State authority, practically holding that by the act of July 14, 1862, authorizing the construction of the bridge in question, Congress had exhausted its power to regulate interstate commerce

in this respect and could only require the alteration of such a bridge upon making compensation to the owners.

The Government maintains that the right to alter or amend the act of 1862, so as to require the alteration of bridges constructed under its authority, in the event they should become material obstructions to the free navigation of the river, was necessarily reserved; that Congress could not surrender its power to regulate interstate commerce in this respect; that section 18 of the act of March 3, 1899, is an appropriate exercise of such power, and that the principle of uncompensated obedience to the exercise of the police power, which was upheld in the *Union Bridge Co.* and *Monongahela Bridge Co.* cases and other prior decisions of this court, is applicable to the case at bar.

The questions presented in this case are of great public importance. They affect not only the bridge here in question, but other bridges across the Ohio River constructed under authority of the act of July 14, 1862, whose alteration is required by the needs of navigation. Particularly is this so of the bridge across the Ohio River, at Steubenville, also erected under authority of the act of 1862, which the Secretary of War, in a recent letter to the department requesting the institution of criminal proceedings under section 18 of the act of March 3, 1899, states "now stands as an actual bar to the proper prosecution of the 9-foot project for the improvement of the Ohio River recently undertaken by Congress as being of great national importance;" that, "pend-

ing the modification of said bridge, either as the result of these proceedings or of future action by Congress, the lock and dam near the site of the bridge, No. 10, which is the only one of the upper 16 not yet completed or under construction, is necessarily held in abeyance," and "that the full value of the improvement already made and in immediate prospect can not be realized until this lock and dam is completed."

As any proceedings under the act of March 3, 1899, to compel the alteration of the bridges referred to will have to be brought in the Northern District of West Virginia, where the present action was instituted, and as the courts of that district have already decided the questions involved against the Government, it is manifest that the Government can not proceed with the work of improving the Ohio River which Congress has authorized until this court has finally determined such questions.

It is therefore urged that the case be advanced and assigned for hearing as above suggested.

Respectfully submitted.

FREDERICK W. LEHMANN,
Solicitor General.

APRIL, 1911.

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In the Supreme Court of the United States.

OCTOBER TERM, 1911.

UNITED STATES, PLAINTIFF IN ERROR,
v.
THE BALTIMORE & OHIO RAILROAD COMPANY. } No. 373.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF WEST VIRGINIA.

BRIEF FOR THE UNITED STATES.

STATEMENT OF CASE.

On June 10, 1909, an indictment was returned in the Circuit Court of the United States for the Northern District of West Virginia against the Baltimore & Ohio Railroad Co., its president and managers, charging them with violating section 18 of the river and harbor act of March 3, 1899 (30 Stat., 1121, 1153), by failing to observe the lawful order of the Secretary of War, issued pursuant to that act, declaring the bridge of the Parkersburg Branch Railroad Co., operated and controlled by the Baltimore & Ohio Railroad Co., across the Ohio River at Parkersburg, W. Va., an unreasonable

obstruction to the free navigation of said river on account of insufficient length of channel span, and requiring them to make certain specified alterations to render navigation under it reasonably free and unobstructed. (R., 9–14.)

The alterations specified in the notice were the removal of one pier (No. 38) and the conversion of two spans (Nos. 38 and 39) into one channel span, the company being given until December 1, 1908, to make such alterations. (R., 3.)

The case was tried upon a stipulation of facts (R., 9–14) which admitted, in substance, that the defendant corporation had owned, controlled, and operated the bridge in question since 1871; that in issuing the notice to alter the bridge the Secretary of War had observed all the steps required by the act of March 3, 1899; that the time given to make the changes was ample, and that the defendant had failed to comply with the notice. (R., 9–10.)

It was specifically admitted that the defendant company appeared at the hearing given in October, 1906, relative to the proposed alteration of the bridge, and "offered no evidence on the question of obstruction, but relied on its legal rights." (R., 9.)

It was further stipulated that the railroad company had complied with the requirements of the act of July 14, 1862, in locating and constructing the bridge, the main channel span and the next adjoining span being 326½ feet in the clear; that the bridge

had been maintained as a post route and post road as provided in this act, and that the bridge was the one against the maintenance of which the United States, in October, 1904, sought an injunction in the circuit court, whose judgment refusing the same had been affirmed by the Circuit Court of Appeals for the Fourth Circuit. (*United States* v. *Parkersburg Branch Railroad et al.*, 143 Fed., 224.) (R., 10–12.)

It was also stipulated that in the year 1904 the defendant had commenced and completed a steel superstructure of much greater weight and strength than that which had been used in the original construction of the bridge, but without making any change whatever in the piers of the bridge or of the height or width of the channel spans; that the pier referred to in the notice of the Secretary of War as No. 38 and the spans Nos. 38 and 39 were the same identical pier and spans constructed in 1871, and that Congress had not passed any act providing for the compensation or reimbursement of the defendant for making the changes or alterations specified in the notice given by the Secretary of War, the cost of which would exceed $500,000. (R., 12-13.)

The defendant company offered in evidence a report of three United States engineers, submitted to Congress May 17, 1871, by the Secretary of War, dealing with the bridges then erected or being erected across the Ohio River, and, against the objection of the United States, the record in the suit

against the Parkersburg Branch Railroad Co. (R., 13-14.)

Upon the stipulation of facts and the documents referred to the court directed the jury to return a verdict for the defendant upon substantially the following grounds: (1) That the rights of the United States in respect to the abatement of this bridge had been determined in the equity suit referred to and (2) that the bridge having been erected in conformity with the act of July 14, 1862, Congress could not require its alteration by the defendant without compensating it therefor. (R., 14–16.)

A verdict for the defendant having been returned accordingly (R., 16), this writ of error was sued out pursuant to the proviso to section 18 of the act of March 3, 1899, which gives a right of appeal to either party direct to this court in such cases.

ASSIGNMENTS OF ERROR.

The assignments of error (R., 155–157) allege, in substance, that the court erred in directing the jury to return a verdict of not guilty upon the grounds above stated.

But two questions are therefore presented:

(1) Whether the rights of the United States in respect to the abatement of the bridge in question were determined by the equity suit referred to; and,

(2) Whether compensation is a prerequisite to the exercise by Congress of its power to compel the alteration of the bridge.

STATUTES.

The river and harbor act of March 3, 1899 (30 Stat., 1121, 1153), provides:

> SEC. 18. That whenever the Secretary of War shall have good reason to believe that any railroad or other bridge now constructed, or which may hereafter be constructed, over any of the navigable waterways of the United States is an unreasonable obstruction to the free navigation of such waters on account of insufficient height, width of span, or otherwise, or where there is difficulty in passing the draw opening or the draw span of such bridge by rafts, steamboats, or other water craft, it shall be the duty of the said Secretary, first giving the parties reasonable opportunity to be heard, to give notice to the persons or corporations owning or controlling such bridge so to alter the same as to render navigation through or under it reasonably free, easy, and unobstructed; and in giving such notice he shall specify the changes recommended by the Chief of Engineers that are required to be made, and shall prescribe in each case a reasonable time in which to make them. If at the end of such time the alteration has not been made, the Secretary of War shall forthwith notify the United States district attorney for the district in which such bridge is situated, to the end that the criminal proceedings hereinafter mentioned may be taken. If the persons, corporation, or asso-

ciation owning or controlling any railroad or other bridge shall, after receiving notice to that effect as hereinbefore required, from the Secretary of War, and within the time prescribed by him willfully fail or refuse to remove the same or to comply with the lawful order of the Secretary of War in the premises, such persons, corporation, or association shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five thousand dollars, and every month such persons, corporation, or association shall remain in default in respect to the removal or alteration of such bridge shall be deemed a new offense, and subject the persons, corporation, or association so offending to the penalties above prescribed: *Provided,* That in any case arising under the provisions of this section an appeal or writ of error may be taken from the district courts or from the existing circuit courts direct to the Supreme Court either by the United States or by the defendants.

The act of July 14, 1862 (12 Stat., 569), is as follows:

CHAP. CLXVII.—An act to establish certain post roads.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the bridge partly constructed across the Ohio River at Steubenville, in the State of Ohio,

abutting on the Virginia shore of said river, is hereby declared to be a lawful structure: *Provided,* That when completed, if constructed without a draw, it shall leave an unobstructed headway in the channel of the river of not less than ninety feet above low-water mark, and such channel or waterway shall have an unobstructed width of not less than three hundred feet between the piers next to said channel or waterway; and one of the spans next adjoining thereto shall not be less than two hundred and twenty feet in length; or said bridge, if constructed with a draw, the same to be constructed under the limitations and conditions provided in the fourth section of this act.

SEC. 2. *And be it further enacted,* That the said bridge and Holliday's Cove Railroad are hereby declared a public highway, and established a post road for the purpose of transmission of mails of the United States, and that the Steubenville and Indiana Railroad Company, chartered by the Legislature of the State of Ohio, and the Holliday's Cove Railroad Company, chartered by the State of Virginia, or either of them, are authorized to complete, maintain, and operate said road and bridge when completed, as set forth in the preceding section, anything in any law or laws of the above-named States to the contrary notwithstanding.

SEC. 3. *And be it further enacted,* That it shall be lawful for any other railroad company or companies, whose line or lines of

road may now or shall hereafter be built to the Ohio River, above the mouth of the Big Sandy River, in accordance with the terms of the charter or charters of such company or companies, to build a bridge across said river for the more perfect connection of any such roads and for the passage of trains thereof, under the limitations and conditions hereafter provided.

SEC. 4. *And be it further enacted,* That any bridge erected under the privileges of this act may, at the option of the company or companies building the same, be built either as a drawbridge, with a pivot or other form of draw, or with unbroken and continuous spans: *Provided,* That if the said bridge shall be made with unbroken and continuous spans, it shall not be of less elevation than ninety feet above low-water mark over the channel of the said river; nor in any case less than forty feet above extreme high water, as understood at the point of location, measuring for such elevation to the bottom chord of the bridge; nor shall the span of such bridge, covering the main channel of the river, be less than three hundred feet in length, with also one of the next adjoining spans of not less than two hundred and twenty feet in length, and the piers of said bridge shall be parallel with the current of the river as near as practicable: *And provided also,* That if any bridge built under this act shall be constructed as a drawbridge, the same shall be constructed with a span over the main chan-

nel of the river, as understood at the time of the erection of the bridge, of not less than three hundred feet in length, and said span shall not be less than seventy feet above low-water mark, measuring to the bottom chord of the bridge, and one of the next adjoining spans shall not be less than two hundred and twenty feet in length; and also that there shall be a pivot draw constructed in every such bridge, at an accessible and navigable point, with spans of not less than one hundred feet in length, on each side of the central or pivot pier of the draw: *And provided also,* That said draw shall always be opened promptly, upon reasonable signal, for the passage of boats whose construction may not, at the time, admit of their passing under the permanent spans of said bridge, except that said draw shall not be required to be opened when engines or trains are passing over said bridge, or when passenger trains are due, but in no case shall unnecessary delay occur in the opening of said draw after the passage of such engines or trains.

SEC. 5. *And be it further enacted,* That any bridge or bridges erected under the provisions of this act shall be lawful structures, and shall be recognized and known as post routes, upon which also no higher charge shall be made for the transmission over the same of the mails, the troops, and munitions of war of the United States than the rate per mile which the company or companies erecting such bridge may from time to time re-

ceive on the balance of their line or lines for such services, and the officers and crews of all vessels, boats, or rafts navigating the said Ohio River are required to regulate the use of the said vessels and of any pipes or chimneys belonging thereto, so as not to interfere with the elevation, construction, or use of any of the bridges erected or legalized under the provisions of this act.

Approved, July 14, 1862.

ARGUMENT.

I.

The equity suit has no bearing upon the case at bar, because decided upon a different state of facts.

It appears from the bill filed in the equity case (R., 17) that that was a suit to prevent the alleged reconstruction of the bridge and to have the existing structure abated. This relief was not sought upon the ground that the bridge had been declared an unreasonable obstruction to navigation by the Secretary of War pursuant to section 18 of the act of March 3, 1899, for no such action had been taken by that officer; but the claim that the bridge constituted an unreasonable obstruction to navigation was based entirely upon representations made in the bill as to the needs of navigation and the fact that Congress had, in later acts relating to the construction of bridges across the Ohio River, required the channel spans of such bridges to give a clear waterway of 500 feet between the piers, and the Secretary of War in recent years had required that all bridges over the Ohio River should have channel spans ranging from 600 to 800 feet in length. All, therefore, that could have been decided in the equity case was that, as the bridge had been constructed in accordance with the provisions of the

act of July 14, 1862, the courts had no power to abate it.

The refusal of the court to grant an injunction in the equity suit was doubtless correct, since, as this court has held. it is for Congress to determine whether or not a bridge is to be regarded as an unreasonable obstruction to navigation, and it may legalize what might be regarded as a nuisance by the courts (*Wheeling Bridge cases,* 13 How., 518; 18 How., 421). By the act of July 14, 1862, it had authorized and legalized the Parkersburg bridge, and it alone could declare its further maintenance illegal.

Since the equity case was decided, however, Congress has exercised its power to declare the Parkersburg bridge an unreasonable obstruction to navigation, the notice of the Secretary of War to alter the bridge, issued pursuant to section 18 of the act of March 3, 1899, being in effect the determination of Congress that the bridge is an unreasonable obstruction to navigation. This being so, a wholly different state of facts exists in this case, just as a wholly different state of facts was presented in the second *Wheeling Bridge case,* where Congress had legalized that structure after it had been declared a nuisance by this court.

The question in this case is whether the defendant is guilty of violating the lawful order of the Secretary of War directing the alteration of the bridge, that order having been issued pursuant to section 18 of the act of March 3, 1899, by which Congress

conferred upon him the power to determine, upon due notice and opportunity to be heard afforded the owner of the bridge, whether such structure constituted an unreasonable obstruction to navigation. Anything said by the Circuit Court of Appeals in its opinion in regard to the applicability of section 18 of the act of March 3, 1899, was wholly *obiter*, as the Secretary had not at that time attempted to exercise the power conferred upon him by that act in respect to this bridge.

II.

As to the necessity for compensation.

The view that compensation is a prerequisite to the exercise by Congress of its acknowledged power to compel the alteration of the bridge to meet the present needs of navigation, rests upon the assumption that such action would be a taking of the property of the railroad company for public use. This presupposes that the railroad company, by constructing its bridge in accordance with the act of July 14, 1862, acquired a vested right to maintain that structure in its present form for all time, subject only to the power of Congress to appropriate the same for public use upon making just compensation therefor; in other words, that the act of Congress and its acceptance by the railroad company gave the latter certain contractual rights, including the right to maintain the bridge in its present form, of which it could not be deprived by the United States without compensation.

The Government maintains that the act of July 14, 1862, neither in terms gave, nor was intended to give, a perpetual right to the owners of bridges erected or legalized thereunder to maintain such structures, regardless of the needs of navigation on the Ohio River as they might thereafter be determined by Congress; that the right granted by that act to maintain such structures is necessarily subject to the further regulation of Congress in the interests of navigation; and that the requirement by Congress that any such bridge shall be altered to meet the present needs of navigation is not a taking of private property for public use within the meaning of the Constitution, but is a proper regulation of interstate commerce, in the nature of a police regulation, to which, under the decisions of this court, uncompensated obedience is required.

The language and the history of the act of July 14, 1862, negative the contention of the railroad company as to the rights intended to be granted thereby.

The manifest purpose of the act of July 14, 1862, was to establish certain post roads and place under the protection of the United States bridges across the Ohio River constructed in accordance with the terms of the act.

The act is entitled "An act to establish certain post roads." By its first section it declares the bridge partly constructed across the Ohio River at Steubenville "a lawful structure," if constructed as therein specified, and by section 2 it declares said bridge

and Holliday's Cove Railroad " a public highway, and established a post road for the purpose of transmission of mails of the United States " and authorizes the railroad companies therein named to complete, maintain, and operate said road and bridge when completed, as set forth in the preceding section, "anything in any law or laws of the above-named States to the contrary notwithstanding."

The third section of the act makes it " lawful " for any other railroad company or companies whose line or lines of road shall be built to the Ohio River above the mouth of the Big Sandy River, in accordance with the terms of their respective charters, to build a bridge across said river for the more perfect connection of any such roads and for the passage of trains thereof, under the limitations and conditions hereafter provided in section 4.

Section 4 of the act provides that any bridge erected under " the *privileges* of this act " may, at the option of the company or companies building the same, be built either as a drawbridge or with unbroken and continuous spans; that if made with unbroken and continuous spans, it shall be of not less elevation than 90 feet above low-water mark over the channel and not less than 40 feet above extreme high water, and that the span covering the main channel shall not be less than 300 feet in length, and the next adjoining span not less than 220 feet in length, etc. (The Parkersburg bridge is built with unbroken and continuous spans.)

Section 5 of the act declares " that any bridge or bridges erected under the provisions of this act shall be lawful structures and shall be recognized and known as post routes, upon which, also, no higher charge shall be made for the transmission over the same of the mails, the troops, and munitions of war of the United States than the rate per mile which the company or companies erecting such bridge may from time to time receive on the balance of their line or lines for such services." It further provides " that the officers and crews of all vessels, boats, or rafts navigating the said Ohio River are required to regulate the use of the said vessels and of any pipes or chimneys belonging thereto, so as not to interfere with the elevation, construction, or use of any of the bridges erected or legalized under the provisions of this act."

The provision last quoted clearly illustrates the necessity which existed for Congress authorizing the construction of the bridges referred to in the act. It shows on its face that it was contemplated at that time that bridges of the dimensions provided in the act might interfere with navigation on the river. If they did so interfere, they would be subject to abatement by the courts as obstructions to navigation, unless authorized by Congress. The necessity for such authorization had been illustrated in the *Wheeling Bridge cases* (13 How., 518; 18 How., 421). In the first of those cases, decided in 1851, this court, at the instance of the State of Pennsylvania, adjudged the bridge across the Ohio

River at Wheeling, constructed under authority of the State of Virginia, a public nuisance, because interfering with commerce on the river, and required it to be abated. In the second case, decided in 1855, the court sustained the authority of Congress, notwithstanding its previous decision, to legalize that bridge and subordinate navigation on the river to the use thereof.

That Congress had the *Wheeling Bridge cases* in mind in passing the act of July 14, 1862, appears quite clearly from a comparison of the provisions of that act with the act legalizing the Wheeling bridge. The legislation legalizing the Wheeling Bridge appears as sections 6 and 7 of the act of August 31, 1852 (10 Stat., 110, 112), making appropriations for the Post Office Department. Those sections provided:

> SEC. 6. *And be it further enacted,* That the bridges across the Ohio River at Wheeling, in the State of Virginia, and at Bridgeport, in the State of Ohio, abutting on Zanes Island, in said river, are hereby declared to be lawful structures in their present position and elevation, and shall be so held and taken to be, anything in any law or laws of the United States to the contrary notwithstanding.
>
> SEC. 7. *And be it further enacted,* That the said bridges are declared to be and are established post roads for the passage of the mails of the United States, and that the Wheeling and Belmont Bridge Company

> are authorized to have and maintain their said bridges at their present site and elevation; and the officers and crews of all vessels and boats navigating said river, are required to regulate the use of their said vessels and boats, and of any pipes or chimneys belonging thereto, so as not to interfere with the elevation and construction of said bridges.

It will be observed that the language of the act of July 14, 1862, declaring the bridges "erected or legalized thereunder" lawful structures, that they shall be post roads, and subordinating commerce on the river to the elevation and constructions of said bridges, is copied almost literally from the legislation with respect to the Wheeling bridge.

This being so, it would seem logically to follow that in the act of July 14, 1862, Congress intended to confer no greater rights with respect to the bridges "erected or legalized" thereunder than it had conferred by the same language in respect to the Wheeling bridge.

It is manifestly impossible to contend that Congress, in legalizing the Wheeling bridge and subordinating commerce on the river to the elevation and construction of that bridge, intended to surrender its power to compel at some future time the alteration of the bridge, at the expense of the owners, without compensation, to meet the needs of navigation as they might then be determined by it.

The purpose of Congress in the act of July 14, 1862, to protect the owners of bridges across the

Ohio River against the action of the courts or hostile State legislation is so clearly indicated by the language of the act, as illustrated by the situation and legislation with respect to the Wheeling bridge, that further argument in regard thereto seems unnecessary. In this connection, however, it may be well to bear in mind the language of Chief Justice Waite in delivering the opinion of the court in *Bridge Company* v. *United States* (105 U. S., 475, 480):

> * * * Congress, which alone exercises the legislative power of the Government, is the constitutional protector of foreign and interstate commerce. *Its supervision of this subject is continuing in its nature, and all grants of special privileges affecting so important a branch of governmental power ought certainly to be strictly construed. Nothing will be presumed to have been surrendered unless it was manifestly so intended. Every doubt should be resolved in favor of the Government.*

This is simply an application of the general principle that public grants are to be strictly construed in favor of the public.

> *Charles River Bridge* v. *Warren Bridge,* 11 Pet., 420.
>
> *Turnpike Co.* v. *State,* 3 Wall., 210.
>
> *Stein* v. *Bienville Water Supply Co.,* 141 U. S., 67.
>
> *Hamilton Gaslight & Coke Co.* v. *Hamilton City,* 146 U. S., 258.

Long Island Water Supply Co. v. *Brooklyn*, 166 U. S., 685, 696.

Construing the act of July 14, 1862, as Chief Justice Waite said such a grant should be construed, the contention that Congress thereby intended to surrender its right to require the alteration of such bridges at some future time if the interests of navigation should in its judgment so require is clearly untenable.

The action of Congress in requiring the alteration of bridges to meet the needs of navigation is an exercise of its power to regulate commerce, which, like the police power of the States, can not be surrendered, and to the exercise of which uncompensated obedience is required.

The principle above stated is fully sustained by the recent decisions of this court:

West Chicago Street Railroad Co. v. *Chicago*, 201 U. S., 506.

Union Bridge Company v. *United States*, 204 U. S., 364.

Monongahela Bridge Company v. *United States*, 216 U. S., 177.

Hannibal Bridge Co. and Wabash Railroad Co. v. *United States*, 221 U. S., 194.

In these cases the court applied to the exercise by Congress of its power to require the removal of obstructions in the navigable waterways of the United States the principle that it had previously announced as to the police powers of the State in

respect to franchises of public-service corporations, under which bridges, railroads, gas and water systems are constructed. See

Chicago, Burlington & Quincy Railroad Company v. *Chicago*, 166 U. S., 226, 254.

New Orleans Gas Light Company v. *Drainage Commission*, 197 U. S., 453.

Chicago, Burlington & Quincy Railway Co. v. *Drainage Commissioners*, 200 U. S., 561.

Northern Pacific Railway Co. v. *Duluth*, 208 U. S., 583.

St. Paul, Minneapolis & Manitoba Railway Co. v. *Minneapolis*, 214 U. S., 497.

Cincinnati, Indianapolis & Western Railway Co. v. *City of Connersville*, 218 U. S., 336.

In *Union Bridge Company* v. *United States*, referring to the earlier of the cases last cited, among others, the court said (204 U. S., 399–400):

> Do the principles announced in the above cases require us to hold, in the present case, that the making of the alterations of its bridge specified in the order of the Secretary of War will be a taking of the property of the bridge company for public use? We think not. Unless there be a taking, within the meaning of the Constitution, no obligation arises upon the United States to make compensation for the cost to be incurred in making such alterations. The damage that will accrue to the bridge company, as the result of compliance with the Secretary's order, must, in such case, be deemed incidental to the exercise by the Government of

> its power to regulate commerce among the States, which includes, as we have seen, the power to secure free navigation upon the waterways of the United States against unreasonable obstructions.

Again (204 U. S., 401):

> In conformity with the adjudged cases, and in order that the constitutional power of Congress may have full operation, we must adjudge that Congress has power to protect navigation on all waterways of the United States against unreasonable obstructions, even those created under the sanction of a State, and that in order to so alter a bridge over a waterway of the United States that it will cease to be an unreasonable obstruction to navigation will not amount to a taking of private property for public use for which compensation need be made.

Any doubt on this question arises from a failure to distinguish between the exercise of the power of eminent domain, as to which compensation for the property taken for public use is required, and the exercise of the police power of the State, to which uncompensated obedience is required. Section 18 of the act of March 3, 1899, under which the alteration of the bridge in question was required, is essentially a police regulation. By this it is not meant that Congress possesses the police powers reserved to the States, but that a regulation of interstate commerce of the character in question is essentially a police regulation, just as the safety appliance acts

and the laws regulating steam vessels are police regulations, and the same principle of uncompensated obedience thereto applies.

It is true that in the *Union Bridge Co. case* (204 U. S., 364), as well as in the *Monongahela Bridge Co. case* (216 U. S., 177), the bridges there referred to had been erected under State authority and without express authority from Congress, as in the case at bar. It is difficult to see, however, what difference this fact makes, so far as the power of Congress over the bridge is concerned. A bridge erected under State authority alone across a navigable waterway of the United States is a lawful structure if conforming to the needs of navigation and if not prohibited by Congress. A bridge authorized by Congress is secured against State or judicial action, as illustrated by the *Wheeling Bridge cases,* supra, even if it might be deemed an unreasonable obstruction to navigation by others than Congress; and, assuming that Congress will not act arbitrarily, it has also a certain guarantee against congressional action. But, on principle, the subsequent action of Congress in requiring the alteration of the bridge to meet the needs of navigation can no more be a taking of private property for public use in the one case than in the other.

In the *Hannibal Bridge case,* 221 U. S., 194, the bridge had been constructed under authority of a special act of Congress, and the applicability of section 18 of the general act of March 3, 1899, to such bridge was sustained. It is true that in

that case the act authorizing the bridge *expressly* reserved the right to alter or amend it so as to prevent or remove all material obstruction to navigation on the river caused thereby. While we have not here an *express* reservation of such kind, such power was necessarily reserved. Indeed, it is admitted that the power to require the alterations to be made exists; and, if such power exists, how can it be said that the exercise of it is a taking of private property for public use within the meaning of the Constitution?

Even if the relations between the United States and the owner of a bridge constructed under authority of the act of July 14, 1862, are to be regarded as contractual, any rights acquired thereby were necessarily subject to the future exercise by Congress of its power to regulate interstate commerce, so as to require the alteration of the bridge to meet the needs of navigation.

In the *Legal Tender cases* (12 Wall., 457, 547–552), where it was contended that the legal-tender acts were prohibited by the spirit of the Constitution, because they indirectly impaired the obligation of contracts, the court, after pointing out that Congress might directly (as by passing a bankrupt act) as well as indirectly impair the obligation of contracts, said (pp. 550–551):

> If, then, the legal-tender acts were justly chargeable with impairing contract obligations, they would not, for that reason, be forbidden, unless a different rule is to be applied

> to them from that which has hitherto prevailed in the construction of other powers granted by the fundamental law. But, as already intimated, the objection misapprehends the nature and extent of the contract obligation spoken of in the Constitution. As in a state of civil society property of a citizen or subject is ownership, subject to the lawful demands of the sovereign, so contracts must be understood as made in reference to the possible exercise of the rightful authority of the Government, and no obligation of a contract can extend to the defeat of legitimate government authority.
>
> Closely allied to the objection we have just been considering is the argument pressed upon us that the legal-tender acts were prohibited by the spirit of the fifth amendment, which forbids taking private property for public use without just compensation or due process of law. That provision has always been understood as referring only to a direct appropriation, and not to consequential injuries resulting from the exercise of lawful power.

So, although a State is expressly prohibited by the Constitution from passing any law impairing any obligation of contracts, it has been repeatedly held that such prohibition does not impose any limitation upon the exercise of the police power of the State. Thus, in *Northern Pacific Railway Co.* v. *Duluth* (208 U. S., 583), the court said (p. 596):

> As the Supreme Court of Minnesota points out in the opinion in 98 Minnesota, 380,

above referred to, the State courts are not altogether agreed as to the right to compel railroads, without compensation, to construct and maintain suitable crossings at streets extended over its right of way after the construction of the railroad. The great weight of State authority is in favor of such right. (See cases cited in 98 Minnesota, 380.)

There can be no question as to the attitude of this court upon this question, as it has been uniformly held that *the right to exercise the police power is a continuing one;* that it can not be contracted away, and that a requirement that a company or individual comply with reasonable police regulations without compensation is the legitimate exercise of the power and not in violation of the constitutional inhibition against the impairment of the obligation of contracts.

After citing certain cases illustrating these principles, the court said (208 U. S., 597):

The same principles were recognized and the previous cases cited in *Chicago, Burlington & Quincy Ry. Co.* v. *People of the State of Illinois ex rel. Drainage Commissioners* (200 U. S., 561), and again in *Union Bridge Co.* v. *United States* (204 U. S., 364). The result of these cases is to establish the doctrine of this court to be that the exercise of the police power in the interest of public health and safety is to be maintained unhampered by contracts in private interests, and that uncompensated obedience to laws

passed in its exercise is not violative of property rights protected by the Federal Constitution.

The court here recognizes the fact that there is no difference in principle between the exercise by Congress of its power to regulate interstate commerce by requiring the removal of obstructions in the navigable waterways of the United States, such as bridges and tunnels, and the exercise of the police power by the State over structures placed by public-service corporations in the public highways.

The power exercised by Congress in section 18 of the act of March 3, 1899, over bridges is essentially what is termed police power, and would be so denominated if exercised by the States. The safety-appliance acts and the various regulations of commerce with respect to steam vessels, if enacted by States with reference to subjects within their jurisdiction, would be termed exertions of the police power. Enacted by Congress, they are described as regulations of interstate commerce. In every instance where a regulation of the character just mentioned is authorized, the expense must be borne by the individual concerned. Prescribing one set of regulations on the subject does not exhaust the power of Congress to regulate interstate commerce or prevent it from adding thereto at a future time, even though such course involves an expenditure of money on the part of persons affected. They are simply paying for the privilege of entering or obstructing the highways of interstate commerce.

The fact that in the act of July 14, 1862, Congress specified the dimensions of the bridge is therefore immaterial. All that was then determined was that a bridge of the dimensions prescribed would meet the needs of navigation at that time, or that interstate commerce by land justified the obstruction to navigation on the river to that extent. It contained no guaranty for the future and in no way tied the hands of Congress in respect to the safeguarding of lives and property upon the river.

Bridge Proprietors v. Hoboken Company (1 Wall., 116) distinguished.

In that case it was held that the action of the State of New Jersey in authorizing the defendant company to build a railroad viaduct over a certain river was not an infringement of the exclusive right which had previously been acquired by the bridge proprietors to maintain a bridge and take toll over the same stream, under a contract with the State, as the railroad viaduct was not a " bridge " within the meaning of such grant. The case is pertinent only in so far as it holds that the prohibition, contained in the statute authorizing the contract for the construction of the bridge, against the construction of other bridges for 99 years, was a part of the contract and intended to secure the grant of the right to take tolls for such period. It was held that the obligation of this contract could not be impaired by the State.

But holding that a State could not impair the exclusive right of the bridge proprietors to take such tolls is a very different thing from saying that the State could not, in the exercise of its police power, have compelled the alteration of the bridge to meet the needs of navigation on the river. In *New Orleans Gas Light Co.* v. *Louisiana Light Co.* (115 U. S., 650, 662), where this case is cited, it was distinctly held that the grant of an exclusive franchise to supply gas to a municipality, through pipes and mains laid in the public streets, although, after acceptance, a contract which was protected by the Constitution of the United States against impairment by the State, was nevertheless subject to the exercise by the State of its police power. As above pointed out, this doctrine has been repeatedly affirmed by this court.

Bridge Company v. United States (105 U. S., 470) supports the contention of the Government in this case.

In *Bridge Company* v. *United States* the assent of Congress was given by resolution of March 3, 1869, and the changes required by the act approved March 3, 1871, only two years later, the bridge being in process of construction during the interim. It was very natural under these circumstances that the court should rest its decision upon the express reservation to withdraw its assent made by Congress.

But what was said in that case as to the continuing nature of the supervision of Congress over interstate commerce, the strict manner in which grants of special privileges affecting so important a branch of governmental power should be construed, and as to the inquiry whether navigation was materially obstructed being a legislative matter, necessarily leads to the conclusion that the mere failure of Congress *expressly* to reserve power to prevent material obstructions to navigation can not be taken as impairing its constitutional authority to exercise such power or as necessitating compensation therefor.

Even the views expressed by the dissenting justices in that case do not support the contention that Congress could not require the alteration of a bridge across a navigable water of the United States at the expense of the owner without compensation, although erected with its consent, *whenever such structure became an unreasonable obstruction to navigation.*

The real difference of opinion was upon the question whether the bridge was in fact a material obstruction to navigation, and whether that was a matter for Congress or the courts to determine.

Both the dissenting opinions of Mr. Justice Field and Mr. Justice Bradley proceed upon the idea that the bridge in question was *not* a material obstruction to navigation, and therefore the action of Congress in requiring the alteration of the structure

was an exercise of arbitrary authority, which involved the payment of compensation to the owners of the bridge for the expense of making the modifications required. Mr. Justice Miller's dissent was based upon the construction to be given to the act of March 3, 1871, requiring the alterations, which act, he said, indicated the purpose of Congress to waive the constitutional question as to its power to change the bridge, and in favor of justice and fair dealing to pay the bridge company for the expense it had incurred if it was found that the work, as far as it had progressed at the time of the passage of the act, was in conformity to law.

That Justices Field and Bradley considered that case upon the hypothesis that the bridge was not an unreasonable obstruction to navigation clearly appears from an examination of their opinions.

Thus, after declaring his dissent from the position of the majority of the court as to the paramount power of Congress over bridges crossing navigable streams, Mr. Justice Field said (105 U. S., 492):

> * * * The conclusion I draw is that a bridge constructed by the authority of a State, *if it does not interfere with the free navigation of the stream,* is a lawful structure, and can neither be taken nor destroyed by Congress or by the State, except as other private property may be thus taken—that is, for public purposes upon making just compensation.

Referring to the *Wheeling Bridge case,* which sustained the authority of Congress to legalize a bridge which had been declared by the court unlawful as an obstruction to navigation, he said (105 U. S., 494):

> * * * This is a very different thing from asserting a power to declare that a structure, lawful when erected, *and in no way interfering with the navigation of the river,* is an unlawful structure, removable without compensation to the owner. I can not admit that there is any such arbitrary power under our Government.

Referring to the act of Congress requiring the alterations and giving the courts jurisdiction to determine the liability of the United States, if any, to the company by reason of the changes required, Mr. Justice Field said (105 U. S., 500):

> Under this act the present bill was filed, and it was clearly shown at the hearing that when the act was passed the bridge had been constructed substantially in compliance with all the provisions of law in relation thereto; *that so far as constructed it did not materially obstruct the navigation of the river, and would not have done so had it been completed according to the original plan.* Yet the court below held, and this court sustains its ruling, that for the enormous expenditures forced upon the company the United States are in no way responsible. This court thus, in effect, decides that the power

> of Congress over all structures crossing navigable streams is absolute; and that it can change or remove them at its pleasure, *without regard to their effect upon the free navigation of the streams,* and without compensation to the owners.

Again, referring to the power expressly reserved by Congress to withdraw its assent to the construction of the bridge in case the free navigation of the river should at any time be substantially and materially obstructed, Mr. Justice Field said (105 U. S., 504):

> The General Government, through Congress, thus bound itself not to interfere with the construction of the bridge, nor with the bridge when completed, except on the contingency of its proving a material obstruction to the free navigation of the river. Such contingency had not occurred when the act directing the alterations was passed; it has never occurred. *So the proofs in the case show,* and independently of this circumstance, *whether or not the contingency had occurred, was not a fact to be arbitrarily determined by the legislature. It was to be ascertained judicially upon proofs and after hearing the parties,* like any other disputed fact upon the establishment of which rights of property depend.

So, Mr. Justice Bradley, referring to erections made on the margin of a river or a bridge constructed across it, in accordance with the laws of

the State and the consent of Congress, said (105 U. S., 507):

> I should not have much difficulty in holding, if it were necessary to the decision of the case, that such structures made in conformity with the laws of the State, if not prohibited by any act of Congress, *and not materially interfering with navigation,* would be equally lawful, and entitled to the protection of the Constitution.

It can not for a moment be argued, therefore, that the dissenting justices in that case would have held that Congress could not require the bridge there in question to be modified by the owners at their own expense without compensation if it had been properly found to be an unreasonable obstruction to navigation. They were considering the case entirely from the standpoint of the exercise of arbitrary authority by Congress with respect to a bridge which had been lawfully constructed and which had not, as they thought, been properly found to be an unreasonable obstruction to navigation.

It is settled that the question whether a bridge is an unremovable obstruction to navigation is a legislative and not a judicial one.

A good deal may be said in support of the position that, in view of the peculiar language of the act of Congress in *Bridge Company* v. *United States,* supra, submitting the issues involved to judicial determination, the fact as to whether the bridge as originally constructed would materially

obstruct navigation was intended to be determined by the courts. But no such situation is presented in the present case, and the decision of the majority in *Bridge Company* v. *United States* that that question is a legislative one is supported by the earlier and later decisions of this court.

Thus, in *South Carolina* v. *Georgia* (93 U. S., 4, 12) the court, in asserting that the action of Congress in authorizing the closing of one channel of the Savannah River in order to improve navigation in the other was a proper regulation of interstate commerce, said:

> Upon this subject the case of *Pennsylvania* v. *The Wheeling and Belmont Bridge Co.* (18 How., 421) is instructive. There it was ruled that the power of Congress to regulate commerce includes the regulation of intercourse and navigation, and consequently the power to determine what shall or shall not be deemed, *in the judgment of law,* an obstruction of navigation. It was therefore decided that an act of Congress declaring a bridge over the Ohio River, which in fact did impede steamboat navigation, to be a lawful structure, and requiring the officers and crews of vessels navigating the river to regulate their vessels so as not to interfere with the elevation and construction of the bridge, was a legitimate exercise of the power of Congress to regulate commerce.

In *Union Bridge Company* v. *United States* (204 U. S., 364) it seems to have been conceded that the matter was a legislative one, but the contention was

that the power could not be delegated to the Secretary of War. In deciding that question the court said (204 U. S., 386):

> * * * Beyond question, if it had so elected, Congress, in some effective mode and without previous investigation through executive officers, could have determined for itself, primarily, the fact whether the bridge here in question was an unreasonable obstruction to navigation, and if it was found to be of that character, could, by direct legislation, have required the defendant to make such alterations of its bridge as were requisite for the protection of navigation and commerce over the waterway in question.

The court then proceeded to say that " investigations by Congress as to each particular bridge alleged to constitute an unreasonable obstruction to free navigation and direct legislation covering each case separately would be impracticable," and that a denial of the right of Congress to delegate the power to determine the facts upon which it might act would be " to stop the wheels of government " " and bring about confusion, if not paralysis, in the conduct of the public business." The court further observed that the statute involved—section 18 of the act of March 3, 1899—did not invest the Secretary of War with arbitrary power, as he could only act after giving notice to the parties concerned and opportunity to be heard, and allowing them a reasonable time in which to make any changes that

might be recommended by the Chief of Engineers. (204 U. S., 386, 387.)

The construction given the act of July 14, 1862, by the Government involves no hardship or injustice to the railroad company.

This case presents no question of hardship or of the exercise of arbitrary power such as was presented in *Bridge Company* v. *United States*. The bridge here in question was erected in 1871, and has been maintained without change in size for 40 years. There can be no question that it is inadequate to the present needs of navigation. As stated in the bill filed by the United States in the equity case to prevent the reconstruction of the bridge undertaken in 1904 (R., 19), the act of February 14, 1883 (22 Stat., 414), relating to the construction of bridges across the Ohio River, requires that they shall have a channel span of 500 feet in the clear (R., 19, 21), and the Secretary of War in recent years has required all bridges built over the Ohio River to have channel spans ranging from 600 to 800 feet. The channel span of this bridge is only 326½ feet. Conceding that arbitrary action on the part of Congress or the Secretary of War in respect to the alteration of bridges could be restrained by the courts, it is manifest that that feature is not presented in this case.

The fact that since 1866 nearly every bridge authorized by Congress has been constructed upon this express condition indicates that there is no in-

herent hardship or injustice therein, and that the persons erecting bridges across navigable waterways of the United States realize that neither Congress nor its authorized agent in this respect, the Secretary of War, will abuse the power and discretion reposed in them by the Constitution and laws of the United States in respect to such structures. The fact that a power of government may be abused is no argument against its existence. (*Veazie Bank* v. *Fenno,* 8 Wall., 548; *Spencer* v. *Merchant,* 125 U. S., 345; *Champion* v. *Ames,* 188 U. S., 321; *McCray* v. *United States,* 195 U. S., 27.) But this court has indicated that it would restrain any arbitrary exercise of the power in question. (*Monongahela Bridge Co.* v. *United States,* 216 U. S., 195.)

Meaning and purpose of express reservation of power to alter or amend contained in later statutes.

As pointed out by Chief Justice Waite in *Bridge Company* v. *United States* (105 U. S., 476–477), Congress as early as 1866 began the practice of inserting in acts authorizing the construction of bridges a provision that "the right to alter or amend this act, so as to prevent or remove all material obstructions to the navigation of said river by the construction of bridges, is hereby *expressly* reserved." The language of this proviso indicates that its purpose was simply to avoid possible misconstruction of the authority granted by *expressly* reserving what otherwise would be left to implication.

Cases involving the exercise of the power of eminent domain, and illustrating the difference between the exercise of that power and the police power.

The cases of *West River Bridge Co.* v. *Dix* (6 How., 507), *Monongahela Navigation Co.* v. *United States* (148 U. S., 312), and *Long Island Water Supply Co.* v. *Brooklyn* (166 U. S., 685) illustrate the distinction which exists between the exercise of the police power and the power of eminent domain. Those cases were all cases of the exercise of the power of eminent domain. In every one of them the private property involved, whether tangible or of an incorporeal nature, such as a franchise, was actually taken for the public use, and therefore just compensation was required to be made. So, too, in *United States* v. *Lynah* (188 U. S., 445) and *United States* v. *Welch* (217 U. S., 333), where the property involved was destroyed in making a public improvement, and was held to amount to a taking for public use. In the latter cases, it is to be observed, the property destroyed, unlike bridges or other structures on navigable waters, was not subject to the servitude of navigation.

"There are no circumstances connected with the original construction of the bridge, or with its maintenance since, which so tie the hands of the Government that it can not exert its full power to protect the freedom of navigation against obstructions." (Union Bridge Co. v. United States, 204 U. S., 400.)

This language of the court in the *Union Bridge Co. case* is applicable here. It is true that in that case Congress had not, as here, expressly authorized the construction of the bridge in question. But while, by the act of July 14, 1862, Congress did expressly sanction the construction and maintenance of defendant's bridge, it neither expressly nor by necessary implication surrendered its " full power to protect the freedom of navigation against obstructions," so far as that or any other bridge erected under authority of that act was concerned.

In order to appreciate the extent of the license granted by the United States by that act, we must bear in mind what would have been the situation of persons or corporations assuming to construct bridges across the Ohio River without the authority of such an act. In such event, the legality of any bridge would have depended upon its not unreasonably obstructing navigation on the river. (*Wheeling Bridge Cases,* 13 How., 518; 18 How., 421; *Union Bridge Co.* v. *United States,* 204 U. S., 399.) Congress, however, in the exercise of its paramount authority over navigable waters of the United States could legalize even an unreasonable obstruc-

tion to navigation, as appears from the decision of the Supreme Court in the second *Wheeling Bridge case*. What the act of July 14, 1862, did, therefore, was simply to declare "lawful structures" bridges which in all probability would otherwise have been adjudged by the courts unlawful, because unreasonably obstructing navigation. That the bridges authorized by that act would probably seriously obstruct navigation appears from the provision subjecting navigation in the river to the use of such bridges.

But there is nothing in the act of July 14, 1862, which warrants the inference that, because Congress had concluded to subordinate the interests of commerce on the river to those of commerce by land, it had bound itself for all time to maintain that subordination. There is nothing in that act to prevent it from exercising its full power to regulate interstate commerce by relieving navigation on the river from the burden thus imposed.

The owners of bridges constructed under the act of July 14, 1862, obtained a license to maintain what would otherwise have been speedily adjudged a nuisance, which license they have enjoyed for 50 years, to the prejudice of commerce and navigation on the river. It is unnecessary to determine in this case whether Congress could withdraw this license altogether. But can it be said that it can not require the alteration of the bridge to meet the present needs of navigation? And if such a require-

ment would be a proper exercise of its power to regulate interstate commerce, upon what ground can it be said that it must make compensation to the owners of the bridge for any expense involved therein?

It is to be borne in mind, in this connection, that while the public are interested in the proper discharge of the functions of public-service corporations, the ownership of the structures, machinery, and appliances used by them is in the corporations, and they derive immediate and personal benefit from their operation and use. Thus, a railroad owns the cars which are the subject of safety-appliance regulations and profit by the business in which they are employed. The same is true with respect to the owners of bridges. They also derive the profits from the maintenance of such structures, are primarily responsible for any obstruction which they may cause to commerce and navigation, and should therefore bear any expense which may result from the exercise by the State or the United States of the public power.

Congress can not tie its hands, by contract or otherwise, so that it can not exert its full power to regulate interstate commerce by preventing unreasonable obstructions to navigation upon the waters of the United States.

By the act of July 14, 1862, Congress did not purport to contract away its power to regulate interstate commerce for all time, and it can not be so

construed without violating not only the rule that grants from the public are to be construed strictly in favor of the public, but the fundamental principle that the police power—here termed the power to regulate interstate commerce—can not be surrendered by contract or otherwise.

The case of *Northern Pacific Railway Co.* v. *Duluth* (208 U. S., 583) is directly in point upon the proposition that the police power can not be contracted away.

So, in *West Chicago Street Railroad Co.* v. *Chicago* (201 U. S., 523), the court said that—

> The city was under the duty of protecting the free navigation of the river and its branches—a duty from the discharge of which it could not be exempted by any agreement it might make with the railroad company.

The theory is that the duty of conforming its structures to the necessities of the public health, safety, or convenience, as declared by the legislature, rests upon the corporation enjoying a public franchise, and while such duty may perhaps be voluntarily assumed by the State, it can not be absolutely assumed by it, but may at any time be cast back where it properly belongs—upon the corporation. The same principle undoubtedly applies to any privilege granted by Congress in the exercise of its power to regulate interstate commerce.

It follows, therefore, that even if the act of July 14, 1862, could be construed as an attempt on the

part of Congress to contract away its right to require the alteration of bridges constructed thereunder, it would be ineffective for the purpose, as, under the principle stated, it could not constitutionally do so.

Section 18 of the river and harbor act of March 3, 1899, is applicable to bridges authorized by the act of July 14, 1862.

Section 18 of the act of March 3, 1899, applies in terms to "*any* railroad or other bridge *now constructed*, or which may hereafter be constructed, over *any* of the navigable waterways of the United States." The language of the act is identical in this respect with that of section 9 of the act of August 11, 1888 (25 Stat., 400), and of section 4 of the act of September 19, 1890 (26 Stat., 453), the former being the first provision on the subject.

In the *Union Bridge* and *Monongahela Bridge cases* this statute was applied to bridges across navigable waters constructed under State authority, and in the *Hannibal Bridge case*, recently decided, it was held applicable to a bridge constructed under a specific act of Congress. This court has thus recognized that this section is a part of the general scheme embodied in the recent legislation of Congress, by which the supervision and control of navigable waters of the United States has been given to the Secretary of War under the direction of Congress.

The only question that has ever been made as to the applicability of this or any subsequent statute of the same nature to bridges constructed over the Ohio River under the act of July 14, 1862, has arisen out of the matter of compensation. Conceding the power of Congress to require the alteration of bridges constructed over that river under the authority of the act of July 14, 1862, there has been no question, and can properly be no question, as to the applicability of the legislation referred to.

For the reasons stated, the judgment of the Circuit Court should be reversed.

Respectfully submitted.

WILLIAM R. HARR,
Assistant Attorney General.

OCTOBER, 1911.

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No. 178.

October Term, 1911.

UNITED STATES
vs.
BALTIMORE & OHIO R. R. CO,

SUPPLEMENTAL NOTES FOR DEFENDANT.

I. Res adjudicata applies to this Indictment proceeding, although at the time the decision was made in Equity, the Secretary of War had technically given no notice as required by the Act of 1899. The status of the Bridge and the effect of the Act were both in issue, and decided against the Government in the Equity suit.

II. Where a Statute authorizing a bridge gives assurance of non-interference, that provision is part of the Contract.

I. UPON RES JUDICATA.

The brief for the United States (p. 11) claims that the Decision in Equity is of no effect in this case, because the indictment is for disobedience of an order of the Sec-

retary of War made in 1906, whereas no such order had been made, after notice, when the Equity suit was instituted in 1904; and congress did not *exercise any power to declare the bridge unlawful, until the Secretary issued notice! !*

Hence, the decision in Equity was *obiter.*

This claim amounts to this:

1. In the Equity suit, it was charged that the Bridge was an unlawful obstruction; that the Act of 1862 had been repealed or superseded by that of 1899, and the bridge was subject to the act of 1899; that the Secretary of War had notified the defendant prior to 1904 that Pier 38 should be removed, and one span made from Pier 37 to 39, and that the government had the right to enforce the Secretary's decision; and a prayer was based on that theory.

2. The defendant admitted that the Secretary had communicated that conclusion, but denied that the Act of 1899 had application, and denied that the Secretary had any such power as claimed, and denied that Congress could pass or enforce that Act, against this Bridge.

3. *Therefore,* (the government contends that) the United States, having elected to reach this bridge and enforce the Secretary's ruling in 1904, by *Injunction,* no adjudication in that proceeding, concludes the government, from proceeding 5 years later by *Indictment,* because, meantime, the Secretary had issued a formal citation for hearing and had announced his conclusion.

We submit, that the government might have proceeded in the first place, by Indictment in 1904, instead of electing, by chancery, to put in issue the identical question of the status of the bridge under the Act of 1862, and the force and effect of the Act of 1899 respecting this Bridge.

The Equity decision was, not that the Secretary had

failed to give notice; but it covered the broader question put in issue by the Bill—*that the Secretary had no power over this bridge to make the ruling, and the bridge was not subject to the Act of* 1899.

A judgment upon a pure question of law, is as binding as though upon full proofs.

"A judgment on Demurrer is as conclusive as one rendered upon proof. The question as to the effect of a judgment as res judicata when pleaded in bar of a second action, is its *legal* identity with the judgment sought in the second action; and as a general rule, its extent as a bar is not only what was pleaded or litigated, but what could have been pleaded or litigated.

"Where a plaintiff could have pleaded rights to property in addition to those pleaded, he and his grantees are bound by that election, and after an adverse judgment cannot again assert title to the same property, against the same parties under a different source of title."

North Pac. R. W. Co. v. Schlaght 205 U. S. 122.

When a decision is made upon the validity or construction of a statute, it is conclusive as res judicata upon the parties and their privies.

Law v. O'Regan, 179 Mass. 107.
Cutter v. Evans, 115 Mass. 27.
8 Cyc. 728, "Constitutional Law."

11. A PROVISION IN A BRIDGE ACT, GIVING ASSURANCE OF NON-INTERFERENCE IS A PART OF THE CONTRACT.

The provision of Section 5 of the Act of July 14, 1862,

establishes this bridge as an instrument of Interstate Commerce, as a post-route, and as a military bridge,—the exercise of threefold Federal powers; and concludes, "the officers and crews of all vessels, boats, rafts navigating the said Ohio River are *required to* regulate the use of the said vessels and of any pipes or chimneys belonging thereto, *so as not to interfere with* the elevation, construction or use of any of the bridges erected or legalized under the provisions of this Act."

This last provision, which requires navigation not to interfere with the bridge or its use, is in itself a guaranty, and means much. It excludes navigation from interference with that bridge. It is not pretended that any Act of Congress has undertaken to repeal or to alter that clause. *It is a part of the Congressional contract.*

In Bridge Proprietors v. Hoboken Co., I Wall. 116, New Jersey authorized the building of a bridge, and provided that it should not be lawful "for any person or persons whatsoever to erect any other bridge over or across the said river for ninety-nine years." It was held that this was a contract whose obligation could not be impaired by a law of the state. The Court, (1 Wall. 146,) after observing that the parties who built the bridge, had the positive enactment of the Legislature in the very Statute authorizing it, that no other bridge should be built, and that the prohibition against the erection of other bridges was a necessary and only means of securing to them the value of their grant, said, "without this, they would not have invested their money in building the bridges which were then much needed. * * * * On the faith of this enactment they invested the money necessary. These acts and promises on the one side or the other, are wanting in no element necessary to constitute a contract."

In the Binghamton Bridge case, 3 Wall. 51, the charter

authorized a company to build and maintain a bridge across a river in New York, and provided that it should be unlawful for any one to erect a bridge or establish a ferry within a distance of two miles on that river in or above or below the bridge; and it was held that this charter constituted a contract within the meaning of the Constitution, and that a subsequent statute authorizing another company to erect a bridge within a few rods of the old one, was null and void, because the first company's charter was a contract between it and the state. In the New Orleans Gas Co. vs. La. Light Co., 115 U. S., at page 650, Mr. Justice Harlan quotes approvingly from the Supreme Court of Louisiana, thus—"In the same manner as Congress may reward the *discoverer of a new invention or mode of constructing roads*, by an exclusive privilege, the Legislature may reward those who employ their capital and industry in doubtful enterprises for the construction of a railway between two points, which may be of great utility to the public, though the success of the enterprise may be precarious."

And the learned Justice, at page 664 of 115 U. S., quotes the lengthy opinion of Mr. Justice Davis in the Binghamton case to the effect that where the Legislature in the act of conferring the franchise, also provides against interference, the Legislature said—to public spirited citizens, "if you would embark with your time, money and skill in an enterprise which would accommodate the public necessities, we would grant to you for a limited period or in perpetuity, privileges that would justify the expenditure of your money and the employment of your time and skill.' Such a grant is a contract with mutual consideration, and justice and good policy alike require that the protection of the law should be assured to it."

Thus, in the case of a state which has granted a franchise to build a bridge and at the same time forbidden an interference, the inhibition is as much a part of the Legisla-

tive contract as is the franchise allowing the construction, and it contains the two elements—first, of a grant, and then of the assurance of protection.

The gas and water cases in 115 U. S. 650 and 674, are unanimously reaffirmed in

> Walla Walla v. Walla Walla Water Co., 172 U. S., 1, page 9.

In the case of the Charles River Bridge, 10 Peters, 420, the bridge charter "*contained no express contract* that the state would authorize no bridge to be built to the injury of the corporation. It is *held*: that no such contract could be implied, and that a law empowering another corporation to erect and maintain a free bridge so near to the first as to practically deprive the first corporation of all toll, was not a law impairing the obligation of any contract."

In West River Bridge Co. vs. Dix 6 How. 507, "a bridge owned by a corporation, and held for the purpose of exercising the franchise granted by its charter, may be taken as part of a public highway, under a general law of the state, authorizing the act, compensation being adjusted and made; and such a law, so applied, does not impair the obligation of any contract."

This case is cited at p. 673 of 115 U. S. (New Orleans Gas Co.) to the point that the way to revoke or destroy rights and franchises which have become vested is to be exercised only upon compensation.

This may be accomplished by empowering a court to settle all questions of liability for requiring alterations, as in Bridge Co. v. U. S. 105 U. S. 470, or by a proceeding in the nature of a condemnation, as in Monongahela Co. v. U. S. 148 U. S. ——.

Each of these cases evidences the construction of Congress, as to the method of recalling, revoking or impairing a franchise, by providing for compensation.

The suggestion of the opposing brief, that the declaration of legality, and the forbidding of interference under the act of 1862, was evidence of obstruction, and a warning that the Bridge would later be abated—seems to be the exact reverse of any fair interference, to be drawn from the plain expression to the contrary.

When that brief asserts (p. 37), that there can be no question but that the Bridge at present is an obstruction, it seeks to override the admitted facts, that the bridge was a lawful structure when completed in 1871, and that navigation under it is as free, easy and unobstructed, as in 1871. (Record p. 12.)

In the language of the opinion in Union Bridge 204 U. S. page 400, the government doubly "tied its hands" (1) by vesting rights and franchises, to withdraw or destroy which is a taking (105 U. S. at p. 481); and (2) by submitting the issue in the Equity cause and suffering an adverse decision.

Respectfully,

B. M. AMBLER,

of Counsel.

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Office Supreme Court, U. S.
FILED.
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JAMES H. McKENNEY,
CLERK.

In the

Supreme Court of the United States

October Term, 1911.

No. [redacted]. 118.

UNITED STATES, Plaintiff in Error,

VS

BALTIMORE & OHIO RAILROAD COMPANY,

Defendant in Error.

IN ERROR
TO THE CIRCUIT COURT OF THE UNITED
STATES FOR THE NORTHERN DISTRICT
OF WEST VIRGINIA

BRIEF FOR BALTIMORE & OHIO RAILROAD COMPANY

W. W. VAN WINKLE,
B. M. AMBLER,
M. G. AMBLER,
Counsel.

In the

Supreme Court of the United States

October Term, 1911.

No. 373.

UNITED STATES, Plaintiff in Error,

VS.

BALTIMORE & OHIO RAILROAD COMPANY,

Defendant in Error.

IN ERROR

TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF WEST VIRGINIA.

BRIEF FOR BALTIMORE & OHIO RAILROAD COMPANY.

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THE CASE.

In the year 1871, the defendant completed a bridge across the Ohio River at Parkersburg, West Virginia, in full compliance with an Act of Congress of July 14, 1862, which prescribed the heighth, width of span, and other requirements, for bridges erected above the Kentucky line (mouth of Big Sandy River); and enacted (sec. 5)

that "any bridge or bridges erected under the provisions of this Act, shall be lawful structures, and shall be known and recognized as post-routes * * * * and that officers and crews of all vessels, boats or rafts, navigating the said Ohio River, *are required* to regulate the use of said vessels and put in pipe or chimneys belonging thereto, so as not to interfere with the elevation, construction or use of any of the bridges erected or legalized under the provisions of this Act."

12 Stat. at Large, 569, chap. 167; present record, p. 70-2.

No power or right was reserved to alter or amend this Act in any respect.

In 1904, an information in Chancery or Bill, was filed in the United States Circuit Court for the Northern District of West Virginia, by the United States against this defendant, and others charging among other things, that Pier No. 38 of this bridge was an obstruction to navigation as determined (without hearing) by the Secretary of War, who had informed the Company that this Pier No. 38 should be removed, and the bridge so altered as to make a single span from Pier No. 37 to No. 39. That bill prayed among other things, the abatement of this pier, and that the alteration be compelled. The Circuit Court, upon full hearing under due process, denied the injunction prayed, giving an opinion in writing (p. 146), and entering a decree February 27, 1905, disposing of the case on the merits, and deciding against the Government.

Upon an appeal taken to the Circuit Court of Appeals for the Fourth Circuit, the whole question was adjudicated.

United States v. Parkersburg Branch Railroad Co. and Baltimore & Ohio R. R. Co., 143 Fed. 224; 74 C. C. A. 354.

The court below was affirmed, and the opinion concluded;—

"We are of opinion—74 C. C. A. 360.

"First: That the allegations contained in the bill to the effect that the bridge in question is a new structure, are not sustained by the evidence, and therefore an injunction will not lie to restrain the Railroad Co., or to abate the bridge as a nuisance.

"Second: That the bridge having been built in conformity with the Act of July 14, 1862, which contained no reservation as to repeal, modification or alteration, the only means by which the structure as now constituted, can be removed and a new bridge constructed in lieu thereof, in accordance with the Act of March 3, 1899, will be by Act of Congress authorizing the same, and providing for just compensation."

That decision by the Circuit Court of Appeals was rendered February 6, 1906, and the status of the bridge and the rights of the Baltimore & Ohio Railroad Co. as the owner, in regard thereto, were thereby judicially determined; and after that time, the Government proceeded no further and took no appeal in that equity case, where the respective rights of the parties had been settled, and the right of the Government to enforce the Act of 1899 as against this bridge, had been denied; (Agreed Facts, Record p. 11-12.)

Some time after this, "the Secretary of War, pursuant to the Act of March 3, 1899, gave notice to the

defendant of a hearing to be had in October, 1906, relative to a proposed alteration of said bridge, and the defendant appeared and offered no evidence on the question of obstruction, *but relied on its rights,* before Major W. T. Russell, Lieut. Colonel U. S. A." (Agreed Facts. Rec. p. 9.)

This hearing before Major Russell was ten months after the question had been decided by the court.

In November, 1906, notice was given by the Acting Secretary of War under the Act of 1899, for "the removal of Pier No. 38 and the conversion of spans Nos. 38 and 39 into one channel span."

"The necessary cost and expense of altering the said bridge in the manner specified in the notice * * * * to-wit, the removal of Pier No. 38 and the conversion of spans Nos. 38 and 39 into one channel span, would exceed $500,000.00, and would entail great loss and inconvenience to the defendant in the conduct of its business." (Agreed Facts, Rec. p. 13.)

The time given for the making of these alterations was to December 1, 1908; and the alterations were not made.

At the June Term, 1909, of the Circuit Court at Parkersburg, an indictment was found against the defendant for failure to obey that order.

On the trial before a jury, the court directed a verdict of "not guilty," and entered judgment accordingly.

This indictment is for disobedience to the order of the Secretary of War, issued under an Act of Congress, which the courts, on full consideration, had previously held was not applicable to this bridge.

Prior to the commencement of that litigation, the Executive Department, in July, 1904, had decided (Attor-

ney General Moody—25 Opinions of Attorney Generals, 194-206) that the owners of bridges erected under this Act of July 14, 1862, cannot be required to alter or modify them at their own expense without compensation; and (page 206) that a distinction suggested between the taking and the destruction of property under such circumstances does not exist.

There are at least five particulars which distinguish the bridge here involved, from each and all of those heretofore considered by this court:—

1. This bridge was built under an act of Congress absolute in its terms, vesting a franchise, and reserving no power or right to alter, amend or repeal.

2. It was completed in 1871, before any other act was passed that could possibly apply to this structure.

3. All persons navigating the Ohio were commanded by this Act, to *avoid any interference with this bridge or the use of it,* and to regulate their operations accordingly.

4. Before the Secretary of War undertook to enforce the provisions of the Act of 1899, and to determine the rights and status of that bridge, the Government had gone into court and submitted all the questions involved, and the decision of the Courts was adverse to the claims of the Government, and denied that this bridge was amenable to the Act of 1899.

5. Two attorneys General, had delivered opinions, that the Act of 1899, was not applicable to this bridge—22 opinions, 346; 25 Ib. 194.

STATEMENT.

The Circuit Court directed the jury to return a verdict of not guilty, under an Indictment found on June 10th, 1909, which charged under Sec. 18 of the Act of March 3rd, 1899 relating to Rivers and Harbors, (30 Stats. 133.);

That the Baltimore & Ohio Railroad Co. owned and operated a Bridge across the Ohio River at Parkersburg. * * * The Secretary of War having good reason to believe that the said bridge was an unreasonable obstruction to the free navigation of the Ohio River, on account *of insufficient height and length of spans,* gave notice "to—so alter said bridge as to render navigation under it reasonably free, easy and unobstructed;" (That before that notice was given, opportunity was given to be heard touching the premises; a hearing was had on October 2nd, 1906, by Major Russell of U. S. A. at which the Company appeared; a report of the hearing was forwarded to the secretary.)

And, thereafter, notice dated Nov. 7, 1906 was regularly given to the Company as follows:

"Whereas the Secretary of War has good reason to believe that the bridge * * * * is an unreasonable obstruction to the free navigation of the Ohio, on account of *insufficient length of channel spans,*" and the following alterations * * * * are required, to-wit:

"The removal of pier No. 38 and the conversion of spans Nos. 38 and 39 into one channel span * * * *

"Now, therefore, in obedience to and by virtue of section 18 of the Act of March 3rd, 1911, I, (Robert Shaw Oliver, acting secretary of war) do hereby notify said B. & O. R. R. Co. to alter the said bridge

as described above, and prescribe that said alterations shall be made and completed on or before December 1st, 1908."

The charge then is that the notice gave ample time; that the changes had been recommended by the chief of U. S. Engineers, and although duly notified, the said company and its officers, have wilfully refused and failed "*to comply with the said lawful* order of the secretary of war contained in said notice set forth, by unlawfully failing, refusing and neglecting * * * * to make the alterations prescribed. * * * *"

This indictment is based upon section 18 of the River & Harbor Act of March 3rd, 1899—30 Stats. at L. 133, 148 Chap. 229 Supp. to Revised Statutes, Vol. II, 1892-1899, p. 991, U. S. Comp. Stats. 1901, p. 3545;

"Whenever the secretary of war shall have good reason to believe that any railroad or other bridge now constructed, or which may hereafter be constructed, over any of the navigable water ways of the United States is an unreasonable obstruction to the free navigation of such waters, on account of insufficient height, width of span or otherwise * * * * it shall be the duty of said secretary, first giving the parties reasonable opportunity to be heard, to give notice to the persons or corporations owning or controlling such bridge, so to alter the same as to render navigation through or under it reasonably free, easy and unobstructed; and in giving such notice he shall specify the changes, recommended by the chief of engineers, that are required to be made, and shall prescribe in each case a reasonable time in which to make them. If at the end of such time, the alteration has not been made, the secretary of war shall forthwith notify the U. S. District Attorney * * * * to the end that the criminal proceedings hereinafter mentioned may be taken. If the persons, corporation, or other association

owning or controlling any railroad or other bridge shall after receiving notice to the effect, as hereinbefore required, from the secretary of war, and within the time required by him, wilfully fail or refuse to remove the same or to comply with the lawful order of the secretary of war in the premises, such person shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine not exceeding $5,000, etc."

A demurrer and motion to quash this indictment were overruled. A plea of "not guilty" was entered, with issue thereon, and a jury empaneled.

The government "offered as its evidence and rested its case on an agreed statement of fact." (Record p. 8, 9.)

Facts Agreed.

That agreement covers the points, among others;

1. That the defendant since the year 1871 has owned and operated the Bridge. (p. 9.)

2. The secretary of war gave notice of hearing pursuant to the Act of 1899; and the defendant appeared and "offered no *evidence but relied on its legal rights.*" The defendant had reasonable opportunity to be heard with regard to the proposed alteration.

3. A report was duly forwarded to the secretary of war, and, thereafter, the notice in the indictment shown, was issued. (p. 9.)

4. The changes had been recommended to the secretary by the chief of Engineers.

5. Notice was duly served November 12th, 1906.

6. The time prescribed in the notice was ample and reasonable. The defendant has not complied with the

notice, and the defendant still continuously maintains its bridge, during the month of December 1908, and up to date (June 1910.) (p. 10.)

7. The Bridge was constructed by the defendant under and pursuant to the act of July 4, 1862, entitled "An act to establish certain post roads." (12 Stats. at Large 569, Chap. 167, copied at page 70 of present record.)

It was completed in January, 1871, and has been continuously since that date, in 1871, maintained and operated for the passage of through trains over the lines of railroad forming a part of the Baltimore & Ohio system, and for the carrying of persons and freight and mails of the United States.

8. The bridge when completed in 1871, was erected under the provisions of and in full compliance with, said act of 1862; and *was then and there a lawful structure in the meaning and contemplation of said act.* It was made with unbroken and continuous span not less in elevation than ninety feet above low water * * * * and not less than forty feet above extreme high water, measured from the bottom chord, with main channel span of three hundred and twenty-six and one-half feet in the clear, and the piers parallel with the current, as near as practicable.

9. The defendant, in the location and construction of the bridge, conformed to and complied in all things, with the conditions and requirements of said Act of 1862, and has maintained the bridge in conformity therewith and has operated the same as a post road and post route for the transmission of mails, troops and munitions of war of the United States, at the charges and in the manner, prescribed by the act.

10. Under an act of 1870, the secretary of war detailed three engineers to examine and report upon all bridges erected or being erected over the Ohio. They reported—

"The board have no changes to recommend in this bridge, which has been admirably built with the most liberal care for the interests of navigation"—"and all of that report is put in evidence."

(This is senate document No. 1, Record p. 35—part especially referred to is "Parkersburg Bridge", p. 55 of present record.)

11. This bridge is the same mentioned in the Equity suit in the Circuit Court of October, 1904, wherein an injunction was refused February 27th, 1905, and an appeal taken by the United States to the Court of Appeals for Fourth Circuit and there affirmed. (143 Fed. 224, 74 C. C. A. 354.)

12. "The record in said cause as printed in the Circuit Court of Appeals and all parts of that record may be treated as properly certified, and all certification of said record or any documents or writing therein mentioned are waived, but when any such record or paper is offered, either party may object on any ground, except lack of authentication."

(Present Record, p. 12.)

13. About 1904, the defendant commenced and completed a steel superstructure of much greater weight and strength than that used in the original construction—because the original superstructure needed *repairs and renewal,* and because a much more substantial and

stronger superstructure was needed to meet and provide for the increased tonnage and increased weight and strain of more modern cars and engines. That work was completed before the indictment was found; and while *the bridge was still in use and continuous operation.* In making such repairs and erecting such superstructure, the defendant at no time *made any change whatever* in the piers of the bridge, and in no manner or extent lowered the height of the channel spans. * * * *

14. At no time have the piers of the bridge been changed, and navigation under said bridge has, **continuously since 1871, been, and is, as free, easy and unobstructed, as when said bridge was completed and became a legal structure, in 1871.**

15. No pier has been placed in the river or maintained by the defendant other than the original piers, which were erected and have been continued in use since 1871. The pier referred to in the notice of the secretary of war as No. 38, and the spans Nos. 38 and 39 are the same identical pier and spans originally constructed in 1871, and continuously maintained from that time to the present with the single exception, that without lowering the chords of the bridge, or lessening the free space under the bridge or changing the length of any span, new material has been incorporated in the superstructure. (Record p. 12.)

16. Congress has passed no act providing compensation to be paid, or expenses to be reimbursed to the defendant, for the making of any changes or alterations according to the notice of the secretary of war. (Rec. p. 13.)

17. The necessary cost and expense of so altering

the bridge by removing Pier 38, and converting spans 38 and 39 into one, would exceed Five Hundred Thousand Dollars ($500,000) and would entail great loss and inconvenience in business.

The foregoing facts are admitted as absolutely true, with right of either party to offer additional evidence or testimony.

(See Stipulation—Rec. pp. 7-13.)

"Additional Evidence."

After the Government put in evidence the foregoing "Facts Agreed", the defendant read the report of the Board of Engineers, which in 1871 reported "The Board have no change to recommend in this bridge, which has been admirably built, and with most liberal care for the interest of navigation."

(This report is made part of the evidence by paragraph 10 of stipulation, p. 11, and is part of the record in the equity suit, and reproduced at page 35 of the present record.)

Defendant, also, offered the record in the Equity suit referred to in paragraph 12, of the stipulation where the certification of all parts thereof is waived. (page 12.)

To this record, the United States objected on the ground, "that the record in this case in a *civil proceeding* can not be introduced on the present hearing, which is a *criminal proceeding,* and is not *material* to the issue involved herein."

The objection was overruled and exception taken.

The defendant offered the mandate of the Circuit

Court of Appeals, in the same case, to which the government objected "on the ground that the same is not material to this issue, and is not binding in this criminal prosecution."

The objection was overruled, and exception taken.

When the evidence was closed the defendant moved the court to direct a verdict for the defendant, which motion was resisted by the government.

The court thereupon charged the jury:

"I direct a verdict for the defendant in this case for these reasons." (Record p. 14.)

(Then follow the reasons, which, of course, could have no influence whatever upon the action of the jury, after the peremptory direction had been given. They are discussed later.)

The government excepted to the direction to acquit the defendant, and to the reasons given by the court for such direction.

The jury returned a verdict of not guilty; and judgment thereon was entered. (Record p. 8.)

The Injunction Suit.

It is material to consider the elaborate care with which the Injunction suit of 1904 raised the questions presented by the Indictment.

The Injunction suit was a proceeding in Equity, to prevent the contemplated repairs to the Bridge, to enforce the penal acts of Congress, which the government claimed to be applicable to it, and, to decree the bridge to be an unreasonable obstruction to navigation ab initio. The Bill distinctly sought to compel the

removal of Pier No. 38, and the making of one span from Nos. 37 to 39.

The Bill was filed in October, 1904, and alleged par. 4, 5, 6 (p. 18.):

That on July 14th, 1862, Congress passed the Act "to establish certain post roads (12 Stats. 579, copied at pp. 70-1 of record) containing provisions regulating the building of bridges across the Ohio, above the Big Sandy River—the dividing line between West Virginia and Kentucky; that this act prescribed the height and length of spans, then deemed sufficient for the main commerce of coal transportation; that the defendant built this bridge, about 1870 or 1871, acting under the authority of that Statute, and in *accordance with its provisions.*

That on December 18th, 1872, (par. 7) Congress passed an "Act to authorize the construction of Bridges across the Ohio River." (17 Stats. 3987,) which superseded the Act of 1862, and provided: that the right to alter or amend *this act* * * * *is expressly reserved, without any liability of the Government for damages on account of the alteration, or amendment of this act, or on account of the prevention or requiring the removal of such obstructions. * * *(Rec. p. 19.)

8. That on February 14th, 1883, an Act was passed (22 Stats. 414) amending that of 1872; "that every bridge *hereafter* erected shall have at least one channel span of 500 feet etc." and this act reserved the right to alter, amend or repeal, as in the act of 1872. (Rec. p. 19-20.)

9. This new requirement of 500 feet span was for the accommodation of the rapidly increasing river traffic.

10. On September 10th, 1900, Congress passed an Act (26 Stats. 426) authorizing the secretary of war, when any bridge is an unreasonable obstruction * * * * to require alteration.

11. *On March 3rd,* 1899, an Act was passed (the

act in question) that it shall not be lawful to construct or commence a bridge * * * * until approved, etc. (p. 21.)

12. The Secretary has recently required all bridges over the Ohio to have a channel span of at least 600 feet * * * * while the defendant's span does not exceed 349 feet; and these *spans have been since* 1871 * * * * a serious and dangerous obstruction to navigation. (pp. 21-2.)

13. (p. 22) The defendant notified the secretary of war in 1902, that it proposed to renew two channel spans 38 and 39, and submitted plans, which were disapproved, and leave was denied; but the defendant was going ahead, to construct a new bridge, as to those two spans, under the pretext of repairing them, while the United States has notified the defendant that consent would be given, on condition of removing the pier (38) between spans 38 and 39, and uniting spans 38 and 39 in one span, so as to make 698 feet. (p. 23.) "In order to prevent said bridge from being an unreasonable obstruction to navigation, a less width of span could not be permitted." (p. 23.)

14. That the *existing* bridge is and will continue to be a serious, dangerous and unreasonable obstruction to navigation, and neither congress nor the secretary of war has sanctioned the rebuilding * * * * and the construction will be in violation of law.

15. The defendant proposes to put in false work and temporary trestles, etc., during the work * * * "an additional serious, dangerous and unreasonable obstruction (p. 23.) * * * * in violation of law." (24.)

16. The obstruction to navigation should be removed by requiring the defendant to leave a channel span of such length *as the court may deem necessary,* but not less than 500 feet * * * * *even though in the opinion of the court, the additional cost incident to such alteration should be borne by the government.* (24.)

17. Argues the duty of congress to keep navigation free and charges "that said Bridge *is,* and the proposed

new bridge, on the *same* piers, abutments and masonry will be, an unreasonable obstruction to navigation. (25.)

18. Argues that the permission contained in the Act of 1862, was intended to last only a reasonable time; and vested no perpetual right.

19. The permission to build carried the *implied* reservation to require the bridge to be altered, changed or removed. (25.)

Prayer: (1.) To enjoin defendant from constructing the contemplated bridge with a span of less than 698 feet, and without consent of Congress and War Department.

(2.) *To decree the existing bridge an unreasonable obstruction.*

(3.) To require the removal of the bridge, or replacement with such as shall conform to existing law.

The gravamen of that Bill is:

1. That the bridge, which was in 1871 a lawful structure authorized by the Act of 1862, was an obstruction to navigation when completed, and had become unlawful, by reason of Acts of Congress subsequently passed, and by reason of increased demands of navigation. Its maintenance is criminal and violative of the several Acts of Congress.

2. That the government had indicated that the bridge should be altered by "removing Pier No. 38 and uniting spans 38 and 39 in one span." (p. 23.)

3. That until so altered and made to conform to this requirement, it should be enjoined and should be removed, or replaced by such a bridge as shall conform to the law. (26.)

The Indictment is "for failure to make alterations required for the removal of *Pier* 38, and the conversion of spans Nos. 38 and 39 into one channel span."

The Bill sought to enforce the statute by Injunction; the Indictment, by penalty.

The Equity suit, though in the form of a civil action is, in its essential character, an information to punish crime and to enforce by injunction, penal and criminal legislation, as in

State of Oklahoma vs. Gulf, Colorado & Santa Fe R. R.

decided by U. S. Supreme Court April 3rd, 1911.

The answer in the Equity suit, p. 28-34:

Admits construction and ownership of Bridge, and continuous use for passing of trains since 1871; and that it was built under the act of 1862, which is quoted in full (29-30) including sec. 5 of the Act.

Sec. 5. "That any bridge or bridges erected under the provisions of this act shall be *lawful* structures and shall be recognized and known as post routes, * * * * Officers and crews of all vessels, boats or *rafts* navigating the Ohio River are required to regulate the use of said vessels and of any pipe or chimneys belonging thereto, so as not *to interfere with the elevation, construction or use of any of the bridges erected or legalized* under the provisions of this Act."

The answer (par. 6) shows that this bridge more than complied with the requirements of that Act; and Congress in 1870, had a Board of Engineers appointed to examine Ohio River Bridges, and report whether any obstructed navigation, and on the cost of changing any obstructing bridge to conform to recommendations. Such Board reported, "the Board have no changes to recommend in this (Parkersburg) bridge, which has been admirably built, and with the most liberal care, for the interest of navigation."

7. (p. 31.) The answer charges that none of the Acts of Congress (Dec. 17th, 1872, Feby. 14th, 1882,

Sept. 19th, 1890) "affect the rights acquired under the act of 1862, by the acceptance of the same, and the construction, maintenance and use of the bridge."

8. Denies that Congress or the secretary of war can, under the Act of 1890, require the alteration or removal of this bridge; and denies that navigation is more obstructed than when the Bridge was completed in 1871; but inasmuch as Congress has not revoked or attempted to revoke the authority granted by the act of July 14th, 1862, but the provisions of that act declaring that this bridge shall be recognized and known as a post road, remain in full force and effect; it is not within the province of the secretary of war, or of this court, to inquire whether this bridge obstructs the navigation of the Ohio River or in what degree."

9. *Denies that the act of March 3rd, 1899 applies to this bridge.*

10. The defendant is obliged to renew the superstructure erected in 1871, and make it stronger than before, but it was proposed not to make any change affecting navigation. As a matter of courtesy, the secretary of war was furnished copies of plans, and was told what was proposed; but this was not done in order to get permission to build a new bridge, under the guise of repairing an old one.

"These respondents (33-4) by their acceptance of the Act of July 14th, 1862, and by the construction and maintenance and use of said bridge, *becam vested with a franchise from the United States,* which is property of which they cannot be divested without due process of law and *without* just compensation; that franchise so granted by Congress includes the right to maintain bridges built, not only during the life of the first superstructure, but by the renewal of the superstructure from time to time as may be required for the maintenance of the bridge as a post route, for the transportation of mails, troops and munitions of the U. S., and the traffic of these respond-

ents as railroad carriers perpetually; and that franchise so granted is today in full force, without even an attempt on the part of Congress to change, modify or revoke the same."

11. No temporary trestling will be used in renewing the superstructure, and no obstruction will be caused to navigation.

The issues in Equity, therefore, in the order of importance were:

1. Could the government compel the railroad company, to alter or remove its bridge, which had been constructed in full compliance with the Act of 1862?

2. Could the company be compelled to make the specific alteration of taking out Pier No. 38, and converting the spans 38 and 39 into one?

3. Was the proposed reconstruction of the superstructure, a new bridge?

In the Circuit Court; the opinion p. 147 of record finds:

1. The bridge under the Act of 1862 was a lawful structure—no right was reserved to alter or amend it. Commencing in 1872, several acts were passed regarding the requirements of bridges across the Ohio, and the right of amendment first came into an act of 1872. There has been no attempt to repeal the act of 1862; and Congress alone can remove the bridge, and then only upon terms just and right to the owners.

2. Bridges built under the Act of 1862 carried vested rights, of which Congress could deprive the owners only upon compensation.

3. The new superstructure upon the old piers, is not a new bridge. (p. 148-9.)

The Circuit Court of Appeals: 143 F. 224, 74 C. C. A. 354, affirms the decision upon the merits; and in the opinion finds upon these identical issues, as framed by the pleadings, where the determining question was raised by assignments of error, thus:

"*First*: The Circuit Court erred in overruling and denying the motion of the plaintiff to grant the permanent injunction prayed for.

Second: Because the evidence showed that the said bridge was a serious and unreasonable obstruction to the navigation of the Ohio River. * * * *

(Record p. 151.)

In these two proceedings, were the same parties, and the same controversy, regarding the same thing, before the same court, putting in issue the status of the bridge, as in rem.

Every question was covered by the decision in the Equity suit.

The Government was defeated in that proceeding instituted to settle these questions; and a few months later started through the Department of War, to reach at law, what had been denied in chancery.

Assignments of Error

The main points are:

First. That it was error to instruct the jury to acquit the defendant.

Second. It was error to admit the record in the equity suit, which was decided before the indictment was found.

Third: That the court erred in the expression of certain views with regard to the law which were stated as reasons for directing the jury peremptorily to find a verdict for the defendant.

ARGUMENT.

I.

This Bridge erected under the Act of July 14th, 1862, is not subject to proceedings or action by the Secretary of War, under section 18 of the Act of 1899.

(1.) No power or right was reserved to alter, amend or repeal the Act of 1862.

(2.) This Act was special and local, and is exempt from the operation of that of 1899, which does not apply to this Bridge.

(3.) The defendant, upon completing its bridge in 1871, acquired a vested right in the franchise of maintaining a lawful structure,

(4.) And was entitled to its property.

(5.) If Congress undertakes, in exercising Supreme control, to compel the removal of the bridge as an obstruction, or to condemn and take it or any part thereof, or to require the expenditure of a half million dollars,

by the company in alterations for the improvement of navigation,—then Congress must proceed subject to the limitations of providing just compensation and due process of law.

(6.) Where Congress requires the expenditure of money for altering a lawful Bridge, erected by direct authority of Congress, and, also requires the yielding of physical property acquired under an act absolute, and unreserved—compensation must be made as for a taking.

II.

The government is estopped by the decision rendered before this indictment was found, in the suit in Equity brought against this defendant, in the same court.

143 Fed. 224; 74 C. C. A. 354.

When the United States invokes the jurisdiction of a court, and submits a controversy, the decision binds and estops the Government.

1. That Equity suit was in the nature of a criminal proceeding.

2. It was, also, a proceeding in rem, to adjudge the status of the bridge, and the right of the defendant with respect thereto to convict the Company of maintaining a nuisance in regard to that pier, which would lead to its destruction or forfeiture.

3. Among the issues there, were the identical questions arising on this Indictment. There was *identity* (1) of parties, (2) of property, (3) of the object, to remove pier 38 and to make one span from 37 to 39, (4) and to obtain a decision that pier 38 and the bridge as it

stood, were, illegal structures and obstructions to navigation.

4. *The general rule denying the admission in a criminal case of a judgment in a civil case, does not apply, to this decision in the Equity suit.*

No objection was made on the ground, that the Equity record was not pleaded. The objections were that it was inmaterial, and because the record in equity was offered on a criminal prosecution.

5. The parties and the subject matter being the same, and it not being a case, where an *acquittal* on a public prosecution is offered in bar of a civil action, the objection, because of difference in rules regarding weight of evidence, does not apply.

6. The defendant was entitled to show, that the question of its rights had been judicially determined, before the Secretary of War concluded to apply the Act o. 1899, regardless of anything except what appeared to him as a physical fact, existing for 35 years.

7. The record showed the acts and conduct of the government in the premises; and was, at least admissible for that purpose.

8. It was admissible because referred to in the Agreed Facts, as part of the case; and if not a bar, it was prima facie evidence.

III.

The Court properly directed an acquittal, and the reasons subsequently assigned, are not grounds for reversal.

I.

This bridge having been completed in 1871, under and in full compliance with the terms of the Act of July 14th, 1862, which contained no reservation of power in Congress, it is not obnoxious to section 18 of the River and Harbor Act of March 3, 1899

This Indictment was found 38 years after the defendant had expended over a million dollars (Rec. p. 57), and completed its bridge; and more than three years after the United States Circuit Court of Appeals had decided the matters in issue in favor of the defendant.

Among the agreed facts, are included: that the Bridge complied in all respects with that statute of 1862, and was a lawful structure as thereby declared; that about 1904, the superstructure was repaired and renewed, without interferring with uninterrupted use; that neither the height nor width of span, has at any time been changed, "and navigation under said Bridge has continuously since 1871 been and is as free, easy and unobstructed as when said bridge was completed and became a legal structure in 1871;" that the alteration required by the Secretary of War, would cost over $500,000; and no provision has been made for the compensation: (Record, pp. 10-13.)

The terms of the Statute are peculiar and special.

(12 Stats. 569, Record, pp. 70,71.)

The first section declares a bridge partly constructed across the Ohio at Steubenville, to be a lawful structure: Provided, it shall have, when completed, a headway of ninety feet, and a channel or water way under it of three hundred feet between the piers next to the channel; and

one of the spans next adjoining shall be not less than two hundred and twenty feet in height. Section 2 declares that bridge to be a post-road, and that certain corporations are authorized to complete, maintain and operate it.

Section 3. It shall be lawful for *any other railroad company or* companies, whose line or lines may be built to the Ohio * * * * above the mouth of the Big Sandy River * * * to build a bridge * * * under the *limitations and conditions hereafter provided.*

Section 4: Provides for either draw-bridge or continuous (fixed) span; and if the latter, "it shall not be of less elevation than ninety feet above low-water mark, nor less than forty feet above extreme high water; nor shall the span covering the channel be less than three hundred feet in length with one of the adjoining spans not less than two hundred and twenty feet."

Section four specifies every "limitation and condition" intended; and this expression of Congress excludes any addition thereto, under the familiar maxim "Expressio unius."

Section 5 concludes the entire enactment:

"That any bridge or bridges erected under the provisions of this act shall be lawful structures, and shall be recognized and known as post routes, upon which also no higher charge shall be made for the transmission over the same, of the mails, the troops and munitions of war of the United States, than the rate per mile which the company or companies erecting such bridge may from time to time receive on the balance of their line or lines for such services; and the officers and crews of all vessels, boats or rafts navigating the Ohio River, are required to regulate the use of the said vessels and of any pipe

or chimneys belonging thereto, so as not to interfere with the elevation, construction, or use of any of the bridges erected or legalized under the provisions of this act."

This section 5 is largely taken from the Act of 1852 (10 Stats. 112), by which Congress intervened to settle and regulate the conflicting claims of interstate Bridge and River Commerce, with regard to the celebrated Wheeling Bridge, and passed an Act declaring it a legal structure, although the Supreme Court had adjudged it to be a nuisance.

Congress, by that Act, gave to each interest full provision for future operation, and enacted that where river interests should clash with bridge transportation, the latter should have the preference.

Penna. vs. Wheeling & Belmont B. Co., 9 How. 647.
Same, (Dec. Term, 1851) 13 How. 518.
Same, Dec. 1855, 18 How. 421.

In the matter of the Wheeling bridge the bill was filed by the State of Pennsylvania against the Bridge Company, and the cause was referred to Chancellor Walworth, in May, 1850, to report upon the question of "whether or not the bridge aforesaid, is or is not, an obstruction of the free navigation of the Ohio River, etc.; and if an obstruction, what change or alteration, if any, can be made, etc., and all other questions are reserved. 9 Howard 657.

In State of Pennsylvania v. Wheeling Bridge Co., 13 Howard 556, the case same on for final hearing, and the court decided:

"1. That the Wheeling bridge is an obstruction of the free navigation of the Ohio by vessels propelled by steam.

"2. A State law of Virginia authorizing this obstruction was inoperative,

(a) Because it impaired the obligation of the compact between Virginia and Kentucky; and

(b) Because it is in conflict with the legislation of Congress which regulates the commerce among the different states and with foreign nations carried on upon this river."

The final opinion, after several hearings were had, commences at 13 Howard, page 557, where the court at page 623 says, "in their former opinion nothing was said, from which an inference could be drawn, *that the right of crossing the Ohio River* by bridges, was incompatible with its navigation. Had this bridge been constructed in the language of its (Virginia) charter, 'so as not to obstruct navigation of the Ohio in the usual manner by steam-boats and other crafts as are now commonly accustomed to navigate the same, when the river shall be as high as the highest floods heretofore known,' *this suit could never have been instituted.*"

The decree was entered in May, 1852, (13 Howard 626-7) requiring an elevation of one hundred and eleven feet, and a width between abutments of three hundred feet.

The case next appears, 18 Howard 421, at the December term 1855. Meantime, "in the summer of 1854, the bridge was blown down by a violent storm and the company was preparing to rebuild it according to the original plan, when the next step in the history of the case was taken." (18 Howard, page 422.)

A new bill was presented charging that the Bridge

Co. was about to erect a new bridge, contrary to the decree of the U. S. Supreme Court; upon which an injunction was granted against the erecting of such a bridge (p. 423). Contempt proceedings were taken, and at the December Term, 1854 (18 Howard, 426), "the defendants appeared by counsel, and resisted the motions for sequestration and attachment, etc., under the 6th and 7th section of the Act of Congress (10 Stats. at Large, 122), entitled:

"An Act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, one thousand eight hundred and fifty-three, and for other purposes.

"Sec. 6. And be it further enacted that the bridges across the Ohio River at Wheeling, in the State of Virginia, and at Bridgeport, in the State of Ohio, abutting Zane's Island, in said river, are hereby declared to be lawful structures, in their present position and elevation, and shall be so held and taken to be, anything in any law or laws of the United States to the contrary notwithstanding.

"Sec. 7. And be it further enacted, *that the said bridges are declared to be and are established post-roads for the passage of the mails of the United States,* and that the Wheeling and Belmont Bridge Company are authorized to have and maintain their said bridges at their present site and elevation, and the officers and crews of *all vessels and boats navigating said river are required to regulate the use of their said vessels and boats,* and of any pipes or chimneys belonging thereto, *so as not to interfere with the elevation and construction of said bridges.*"

The defendants also moved to dissolve the injunction granted by Mr. Justice Grier.

The Court held:—

"The power of Congress to regulate commerce, included the power to determine what shall or shall not be deemed, *in judgment of law*, an obstruction of navigation.

"The Act of August, 1852 (10 Stats. 112, declaring the Bridges over the Ohio River at Wheeling to be lawful structures, and requiring the officers and crews navigating the river, to regulate their vessels so as not to interfere with the elevation or construction of said bridges, —is within the legitimate exercise by Congress, of its constitutional power to regulate commerce.

"As a general proposition, it is true, that an act of Congress cannot annul a judgment of the Supreme Court of the United States, or impair the rights determined thereby, especially as respects adjudications upon the private rights of parties; and hence the decree of this court heretofore rendered in this case, so far as it respects the costs adjudged to the complainant, is unaffected by the act of Congress referred to.

"But that portion of the decree of this court at the May term, 1852, in the case of the State of Pennsylvania v. The Wheeling and Belmont Bridge Company, which relates to the abatement of the bridge, proceded upon the ground that the bridge was in conflict with the then existing regulations of commerce by congress, and was executory, depending upon the bridge continuing to be an unlawful obstruction to the public right of free navigation; and that right having since been modified by congress in the exercise of its constitutional power to regulate commerce, so that the bridge is no longer an unlawful obstruction, the decree cannot now be enforced.

"After the passage of the act of Congress referred to, the bridge no longer being an unlawful interference with a public right, the defendant's authority to maintain it, in its then position and height, existed from the moment of the enactment; for the (state and federal) authority then combined the concurrent powers of both

governments, state and federal, and if these are not sufficient, none can be found in our system." 18 Howard, 421.

At page 430, we learn exactly the effect of an Act of Congress legalizing a Bridge that has been adjudicated to be an actual obstruction.

"Since, however, the rendition of this decree, the acts of congress, already referred to, have been passed, by which the bridge is made a post-road for the passage of the mails of the United States, *and the defendants are authorized to have and maintain it,* at its present site and elevation, and requiring all persons navigating the river to regulate such navigation so as not to interfere with it.

"So far as this bridge created an obstruction to the free navigation of the river, in view of the previous acts of Congress, they are to be regarded as modified by this subsequent legislation; and, **although it still may be an obstruction in fact, is not so in the contemplation of law.** We have already said, and the principle is undoubted, that the act of the legislature of Virginia conferred full authority to erect and maintain the bridge, subject to the exercise of the power of Congress to regulate the navigation of the river. That body having in the exercise of this power, regulated the navigation consistent with its preservation and continuation, the authority to maintain it would seem to be complete. That authority combines the concurrent powers of both governments, state and federal, which, if not sufficient, certainly none can be found in our system of government."

The Code of West Virginia at the time this bridge was built, provided, (chap. 44, section 22, Code of 1869.)

"It shall be unlawful to construct any bridge across the Ohio River, or any part thereof within the jurisdiction of this state, without authority for that purpose ex-

pressly granted by the legislature or by the Congress of the United States."

The Act of July 14, 1862, is in almost identical terms with the act of 1852, which was construed at December Term, 1855; but the act of 1862 is stronger, where it differs.

(See the provisions of both Acts, appearing at p. 72 of the record—)

Section 5 of the Act of 1862, was enacted at a critical period of the Civil War. There was need of rapid transportation for "the troops and munitions of War of the United States," as well as for mails; and the Congress could well encourage such bridges, while guarding the tolls, by holding down to a rate "no higher per mile than the Company may receive on the balance of their line for like services"—indicating that the bridge should be maintained as long as the lines should be operated.

Then comes the direct adjustment between river and rail commerce; as an inducement and guaranty and protection, to any railroad companies that would respond to public need.

It contains all that is found in the act of 1852, but adds "rafts," by designation, to the forms of navigation that must keep out of way of the Bridge, and forbids interference with the "*use*" of the bridge, as well as elevation, etc.

"Rafts" come into the Act of 1862, because the Wheeling bridge was by suspension, and the interference was from lack of sufficint elevation to allow the smoke stacks of steamboats to pass (13 How. p. 626); but now that piers are to be put in the river, under the act of 1862, unwieldly rafts by their width and length, are warned to keep off, and all concerned must respect the "*use.*"

This Act of 1852, on which our Act of 1862 is predicated, was the result of a contest between river and bridge transportation. (Record, p. 40.)

The Wheeling case settled—

1. That in the absence of Congressional action, a court of equity had jurisdiction to declare and to enjoin as a nuisance, an interference with navigation, and to require the modification of a Bridge, so as to adjust the relative demands of Commerce by Bridge and Commerce by River.

2. That the Wheeling Bridge was a nuisance and must be abated, as it stood *in May,* 1852.

3. But that the Act of Congress of August, 1852, rendered the Bridge a lawful structure, notwithstanding the Supreme Court found the fact of nuisance, and, therefore, in the eyes of the law, "the defendant's right to *maintain it* * * existed from the moment of the enactment" * * * because if the authority then conferred, "was not sufficient, none can be found in our system."

4. And this bridge having been blown down in 1854, the defendant had the right to reconstruct it, denovo, because Congress had conferred the right to maintain it.

While, therefore, the Federal Courts frequently recognize the Wheeling case as authority, only the two bridges commenced and built under this Act of July 14, 1862 (at Bellaire and Parkersburg), can lay hold of that decision, *as establishing* the construction and effect of the language of the Act of 1862, which was taken from that of 1852, and was held to override the solemn judicial finding of the fact of obstruction, so that by force of the act, it was no obstruction "in the contemplation of the law."

This Wheeling bridge, after completion, was declared by Statute a lawful structure (18 How. 426), and nothing had been done in reliance upon, or by any invitation of, Federal sanction,—while, this Parkersburg Bridge, was built under the Act of 1862, at a cost of $1,223,500, expended upon the faith of the government guarantee. (Record p. 57.)

If the Supreme Court could not, after the Act of 1852, question the legality of the Wheeling Bridge, although previously adjudged an obstruction,—where has since then lain the power to withdraw the assent given by Congress, or to render the structure unlawful?

Can we conceive, that if the Act of 1899, had been passed forty years earlier, say in 1859, the Secretary of War would be vested with the power, to determine that the Wheeling bridge was an unreasonable obstruction, and should be removed or altered?

Would such an Act then have been held applicable to the Wheeling Bridge, so as to confer power on the Secretary of War to determine, in an executive or administrative capacity, that a bridge declared lawful, by Congress, and placed beyond judicial power, was an obstruction and unlawful?

We submit, if the effect of the Supreme Court's decision of nuisance and abatement of the Wheeling Bridge, was nullified by the Act of 1852, legalizing that bridge in terms; it would seem unthinkable that the Secretary of War, could by indictment, nullify the Act of Congress, by finding the bridge to be a nuisance, and overrule the Court by prescribing different requirements for alteration.

It never was contemplated that the scientific ascertainment of physical facts, and the enforcement of regu-

lations in accordance therewith, should include the judicial function of passing upon legal rights under constitutional guarantees, that the Secretary of War should overrule the decision of the courts, and cancel rights vested under the Act of 1862.

In 1862, Congress re-enacted the pertinent points of this Act of 1852, after the Supreme Court had decided that the status of the Wheeling Bridge was fixed by that Act; and Congress advisedly reserved no right to alter any Bridge erected under it.

The purpose was to give an unreserved grant and a continuing pledge.

In the case of the Clinton Bridge, 10 Wall. 454, an Act of February 27, 1865, was passed, declaring that bridge a post-route.

By section 1. The bridge * * * shall be a lawful structure, and it shall be recognized and known as a post-route, upon which no higher charge shall be made for the transmission of mails, the troops and munitions of war, etc. * * *

Section 4. The right to alter or amend so as to prevert or remove all material obstructions to navigation, is hereby expressly reserved."

A bill had been filed to enjoin the building of the Bridge, and to abate it. The Bridge was completed before the passage of the Act (10 Wall., p. 456.)

It was held—

1. An Act of Congress enacting that a certain bridge *already built* "shall be a lawful structure and shall be recognized and known as a post-route", means "not only that the bridge shall be a post route, but, also, that as built, with its abutments, *piers, superstructures,* draw and height, it should have the sanction of law, and be *maintained and used in that condition.* This, although

the act was declared by its title to be simply an act declaring the bridge a post route.

2. "A chancery suit begun previously to the Act, praying injunction against the bridge as a nuisance, is abated by the Act."

The sole authority cited by the Court in 10 Wallace is the Wheeling Bridge case; and the undivided Court holds, that while the language in the Act legalizing the Clinton bridge was not as *explicit* as in the Wheeling case, yet it was as comprehensive. The Clinton case finds the right to maintain and use the bridge as built, with its piers * * and superstructures, in the mere declaration that it is a lawful structure.

We have already referred to the Report of the Board of Engineers in 1871, in response to the demand of Congress, with regard to bridges built or building across the Ohio River, wherein they report that the Bridges built by the Baltimore & Ohio Railroad Co., at Bellaire (Rec. 53), and at Parkersburg, (57) are beyond criticism, "admirably built and with the most liberal care for the interest of navigation. It is a possibility that in the future it will be found that the main spans of these bridges are too narrow. Should that prove to be the case, we think that any changes that may subsequently become necessary should be *made at the National Expense.*" (Record, p. 57.)

Attention is called to this expression, not because we believe that the War Department is authorized judicially to decide legal questions; but at the same time, if the government succeeds in its present position that there is power in that great Department to determine constitutional questions, or by indirection, to repeal vested rights, or to reverse a decree between parties—then the

expression of these engineers at that early period may be pertinent.

* * * *

This act of July 14, 1862, was directly under the eye of the Supreme Court in—

Bridge Co. v. United States, 105 U. S. 470.

On March 3, 1869, Congress had authorized the construction of the Newport & Cincinnati Bridge, from Cincinnati, Ohio, to Newport, Kentucky, to be constructed by the Newport & Cincinnati Bridge Co., a corporation, and provided "said bridge is to be built with an unbroken or continuous span of not less than four hundred feet in the clear * * * and in all other respects in accordance with the *conditions and limitations* of an Act entitled, 'An Act to establish certain post-roads,' *approved July 14th,* 1862*;* * * but Congress *reserves the right* to withdraw the assent hereby given, in case the free navigation of said river shall at any time be substantially obstructed by any bridge to be erected under the authority of this resolution, or to direct the necessary modifications and alterations of said bridge."

Subsequently, on March 3rd, 1871, an act was passed, making it unlawful to build that bridge except at an elevation of one hundred feet, etc., etc.

It was further provided that after the Bridge Co. had made the changes required by that Act, they might file their bill in the U. S., Circuit Court; which court should determine, (1st) whether the alterations had been complied with, and (2d) the liability of the U. S., if any there be, to the Company, by reason of the changes, and (3d) to ascertain and state the amount of the cost and expenditures, *if the United States is liable.* Either the

Government or the Company to have the right of appeal to the Supreme Court; and if the decree should be in favor of the Bridge Co., then the money was to be paid by the Secretary of the Treasury. (105 U. S. pages 473-474.)

It will be observed that this Act of July 14th, 1862, was directly brought to the attention of the Supreme Court in this case; because the resolution of March, 1869, authorizing the Cincinnati & Newwport Bridge, prescribed, that it shall be a span of four hundred feet, *and in other respects* shall be in conformity with the Act of July 14th, 1862, under which the Parkersburg Bridge was built and completed, before the modification was required of the Cincinnati Bridge.

The modification of 1871 referred strictly and exclusively to the Cincinnati Bridge, and rendered unlawful what had been permitted by the original resolution of March, 1869; but it did not touch the Act of July, 1862, although it did say that the bridge at Cincinnati could not be built according to the Act of 1862, which in terms referred to bridges above the Big Sandy River, and would apply only to them.

The Cincinnati bridge was altered. The suit was brought in the Circuit Court for the amount it had expended in making the changes required by the Act of 1871. The bill was dismissed, and appeal taken. Of the eight Justices then on the bench, Judge Matthews did not sit, and Justices Miller, Field and Bradley dissented from the opinion of the other four members, affirming the court below.

The opinion on page 476 (105 U. S.) makes plain, that the court does not decide the question involved in the present case, but on the contrary, the Chief Justice

points to the express reservation "to withdraw the assent hereby given * * * or to direct the necessary modifications and alterations to said bridge." It is shown (105 U. S. 476), that the first enactment by Congress on this subject of Bridges was that of August 31, 1852, relating to the Wheeling Bridge, where Congress reserved no power of future control, and next followed, ten years later, this Act of 1862. In this Act there was no reservation, and, later, in February, 1865, the Act of 1862, was amended by allowing a bridge at Louisville with no power of alteration reserved; but on July 25, 1866, 14 Stat. 244, there was introduced into an Act the provision "that the right to alter or amend this Act, so as to prevent or remove all material obstruction to the navigation of said river by the construction of bridges is hereby expressly reserved;" and all Acts subsequent to 1866, relating to specific bridges or to specific rivers, contained that like provision.

The opinion, 105 U. S. pp. 476-7, traces the history of bridge legislation, and then proceeds:—

"This brings the history of congressional legislation on the subject of bridging the public waters of the United States down to the session of Congress when the resolution in favor of the Newport and Cincinnati Bridge Company was passed, and when, as has already been seen, the peculiar form of reservation which appears in that resolution was for the first time introduced. Two licenses were granted at that session,—one by the act of Feb. 19, 1869, C. 37 (id. 272), to cross the Connecticut, and the other by the resolution now in question, and both contained this reservation. On the same day the resolution was adopted Congress passed the act of March 3, 1869, c. 139 (id. 336), to legalize the bridge across the

East River, between New York and Brooklyn, in which 'power at any time to alter, amend or repeal' was in express terms and without any limitation reserved.

"From this it seems to us clear, that the peculiar language of the reservation now in question, was intended to have a special signification. It had been considered enough before, to provide that, 'to prevent or remove all material obstructions to navigation,' the 'right to alter or amend,' expressed in the usual form, be reserved. "But when power was given to build below the Big Sandy, a bridge such *as had before only been built above,* it was deemed expedient, in the interest of commerce, to be more specific, and by reserving the power to withdraw the assent of congress to what might prove to be an obstruction to navigation, to imply at least a reservation of power to make that unlawful which, *while the assent continued, would be lawful.*"

After holding that Congress in 1871 had withdrawn its consent to the Cincinnati Bridge, unless the required changes were made, the Chief Justice finds that Congress had the right to require the bridge to be removed or alterations be made, and then he proceeds to inquire, whether just compensation must be made for the loss incurred, and decides the question in the negative, on the ground that the Bridge Co. asked permission of Congress, and this permission was granted, on condition that it might be revoked at any time. "This condition (p. 481) was an esential element of the grant, and the company in accepting the privileges conferred by the grant, assumed all risk of loss arising from any exercise of the power which Congress saw fit to reserve. What the Company got from Congress was the *grant of a franchise expressly made defeasible* at will, to maintain a bridge

across one of the great highways of commerce. This franchise was a *species of property,* but from the moment of its origin, its continued existence was dependent on the will of Congress, and this was declared in express terms, on the face of the grant by which it was created. In the use of the *franchise thus granted,* the company might, and it was expected would, acquire property. The property thus acquired, Congress could not *appropriate to itself by a withdrawal of its assent* to the maintenance of the bridge that was to be built, but the franchise, by express agreement, was revocable whenever in the judgment of Congress it should not be used without substantial and material detriment to the interest of navigation. A withdrawal of the franchise might render property acquired on the faith of it, and to be used in connection with it, less valuable; but that was a risk which the company voluntarily assumed when it expended its money under the *limited license which alone Congress was willing to give.* It was optional with the company to accept or not what was granted, but having accepted, it must submit to the control which Congress, in the legitimate exercise of the power that was reserved, may deem it necesary for the common good to insist upon."

The modification of the Cincinnati bridge was required by the Act of 1871 (105 U. S. 473), which Act was based upon the report on that subject (contained in the present record, p. 113), and made by the same Board of Three Engineers, who that year reported upon the Parkersburg & Bellaire bridges, under the Act of 1870. The recommendations of the Board were enacted into law, requiring alterations and authorizing a suit to be brought to determine whether any pecuniary damages had been incurred. "In this way Congress recognized fully the obligation resting on every government, when it is guilty of a wrong to make reparation * * * * * * In our opinion there is no liability." (105 U. S. 483.)

And the decision denying liability is based solely on the ground, *that Congress had reserved the right* to alter without liability.

That this is the right understanding of the point decided in Newport Bridge case, 105 U. S. 470, is shown by the great emphasis laid on that decision, and the explicit statement of the points, made in Monongahela Navigation Co. v. United States, 148 U. S., at page 341:—"It is evident, therefore, that the point decided (in 105 U. S.) was that Congress had reserved the right to withdraw its assent to the construction of the bridge on the plan proposed, whenever in its judgment such bridge should become an obstruction to navigation; that the Bridge Company entered upon the construction of the bridge in the light of this express reservation and with the knowledge that Congress might at any time declare that the bridge constructed as proposed was an obstruction to navigation; and that Congress exercising this reserved power did not thereby subject the Government to any liability for damages. There was no taking of private property for public uses and while the Company may have been deprived of property it was deprived by due process of law, *because deprived under the authority of an express reservation of power.* Even this conclusion was reached with strong dissent, Mr. Justice Miller, Mr. Justice Field, and Mr. Justice Bradley dissenting, and each writing a separate opinion. And these opinions only make more clear the fact that the case was rested in the judgment of the majority, on the effect of the reservation."

On last analysis, the Newport Bridge case, by the narrow majority of four to three, rested upon the proposition that the Bridge Company had no right to complain, and had no vested franchise, for the reason that Congress had made this reservation.

Further along in the Monongahela case, (148 U. S. p. 341,) we find the distinction between a *vested right under a franchise,* and the right made defeasible by the sovereign, by a reservation of power over its exercise.

"The theory of the Government seems to be that the right of the Navigation Company *to have its property in the river,* and the franchise given by the state to take tolls for the use thereof, are conditional only; and that whenever the Government in the exercise of its supreme power assumes control of the river, it destroys both the right of the Company to have its property there and the franchise to take toll; but this is a misconception. *The franchise is a vested right.* The state has the power to grant it. It may retake it, as it may retake other private property, for public uses, upon the payment of just compensation. A like, though a superior, power exists in the National Government; it may take it for public purposes and take it even against the will of the state; but it can no more take the franchise which the state has given, than it can any private property belonging to an individual."

In the case last cited, whence came the liability of the Government of the United States to pay for the property in the shape of locks and dams in the river, and the money value based on tolls?

The Act of Congress directing the condemnation of the locks and dams in terms prescribed, that in making the condemnation—"in estimating the sum to be paid by the United States the franchise of said corporation to collect *tolls shall not be considered* or estimated." 148 U. S. 313.

With an emphasis of a reversing of the court below, the Supreme Court accentuated the liability of the United States, by holding that provision of the Act unconstitutional, and by requiring that the sum to be estimated,

should include not only the value of the tangible property, but also the toll franchise,—"and such franchise is as much a vested right of property as the ownership of the tangible property;"

But the court having decided that all rights granted by the State of Pennsylvania to make improvements in that river, were subject to the paramount authority of Congress whenever exercised; how, and in what way did the Government become bound to pay for property that might at any time be wiped out, when Congress should exercise its supreme control?

The answer is that while the Government passed no act affirmatively legalizing such structures, it did indirectly recognize them, by making an appropriation for the improvement of the river, depending on certain work to be done by the Navigation Company, stating (Opinion, 148 U. S. 334) "In this case there was not only the full authority of *the State* of Pennsylvania, but, also, so far as respects this particular lock and dam, they were constructed at the instance and *implied* invitation of Congress. The Act of March 3, 1881, making an appropriation for the improvement of the river in terms provided, that no such improvement should be made, until the Navigation Company had in good faith started upon the building of this lock and dam. They connected the lower improvements already made by the Navigation Company with the upper improvements proposed to be made by Congress, and the appropriation by the latter was conditioned on the Company's undertaking their construction. This is something more than the mere recognition of the existing fact. It is an invitation to the company to do the work, and when in pursuance of that invitation and under authority given by the State, the company has con-

structed the lock and dam, *it does not lie in the power of the state or the United States to say that such lock and dam are an obstruction, and wrongfully there,* or that the right of compensation for the use of this improvement by the public does not belong to the Navigation Company."

The Monongahela case (148 U. S.) where the government was required to pay the value of tolls, is distinguished from the Newport Bridge case, 105 U. S. 470, where the government was held not liable on account of changes and alterations required in a bridge—by the fact, that the government had rather invited, without directly authorizing, the locks and dams in the Monongahela while as to the Newport Bridge, Congress had, by resolution, authorized the construction, *but had reserved the right to alter and amend.*

The undivided court states that to be the line of distinction, 148 U. S. 312.

The differentiation is not raised upon the view that in the Newport Bridge case, the loss was caused by mere destruction, whereas in the Monongahela case there was a taking by condemnation. The point was that the Newport Bridge had no guarantee whatever, and agreed to occupy the river at the will of Congress. If the ground of distinction had been that of destruction, as compared with appropriation, it would be interesting to note how fortunate were the owners of the Monongahela Company to unload on the government, the locks and dams in the Monongahela, and make the United States pay for them under the guise of appropriation. It would illustrate the pecuniary value of nomenclature and the art of verbal expression.

The "Act to regulate the Construction of Bridges over Navigable Waters", passed March 23, 1906, (34 Stats. 84) is in terms prospective—("hereafter")—but having regard to the same matter, it strongly indicates the Congressional opinion and purpose, upon the main points here involved.

United States vs. Amer. Surety Co., 200 U. S. 199, p. 201, 204.
United States Fidelity & Guaranty Co. vs. United States, 204 U. S. 349, page 359.

The first section requires all plans for bridges hereafter authorized by Congress, to be submitted to the War Department, and forbids the erection of a bridge except when thus approved.

In Section 2, it uses the language of the Act of 1862; in Section 4 it is provided that if any bridge erected under the Act of 1906 shall prove an obstruction, the Secretary of War, shall proceed (substantially as under section 18 of the Act of 1899) and that all alterations *shall be at the cost of the bridge owners.*

By section 5, if the Secretary's order is not obeyed, there shall be a fine; and, in addition, the Secretary may cause the bridge to be removed at the expense of the owner, and the order or direction of the Secretary "*may be enforced by injunction, mandamus or other summary process.*"

A bridge erected under this Act may be altered or removed at any time when found to be an obstruction, and the entire cost and expense thereof shall be borne by the owner. Remedies by injunction and by enforcing a money fine are cumulative. Clearly, under this Act, if it were decreed in an injunction suit, that the bridge was not an obstruction, and that the Secretary's order was void, the defendant would be entitled to a verdict, if prosecuted for a fine, and he would have the right to prove that the issues had been settled in equity.

Moreover, this Act of 1906 shows that Congress

intended that a finding against the owners should determine the status and fate of the bridge, as in the case of Coffey, (116 U. S. 436,) and of Chantango, 218 U. S. 476 (infra, p. 89).

The Congressional sense of liability, unless reservation is made, appears in the concluding section 8, which was framed to meet the expressions of the Supreme Court in 105 U. S. 470, and 148 U. S. 335, and to accord with the requested opinions by Messrs. Attorneys General Griggs and Moody, in 1899 and 1904, (Infra, p. 46).

"An Act to regulate the Construction of Bridges over Navigable Water." (34 Stat. 84.) March 23rd, 1906.

Be it enacted, &c., That when, **hereafter,** authority is granted by Congress to any persons to construct and maintain a bridge across or over any of the navigable waters of the United States, such bridge **shall not be built or commenced** until the plans and specifications for its construction, * * * * * * have been submitted to the Secretary of War and Chief of Engineers for their approval. * * * *

Sec. 2. That any bridge built in accordance with the provisions of this Act, shall be a lawful structure and shall be recognized and known as a post route, **upon which no higher charge shall be made for the transmission over the same of the mails, the troops, and the munitions of war** of the United States than the rate per mile paid for the transportation over any railroad, street railway, or public highway leading to said bridge.

(Sec. 3. Gives privilege to use bridge by other railroad companies.)

Sec. 4. That no bridge erected or maintained under the provisions of this Act shall at any time unreasonably obstruct the free navigation of the waters over which it is constructed, and **if any bridge erected in accordance** with the provisions of this Act shall, in the opinion of the Secretary of War, **at any time unreasonably obstruct such navigation** * * * * * * it shall be the duty of the Secretary of War, after giving the parties interested reasonable opportunity to be heard, to notify the persons owning or controlling such bridge, to so alter the same as to render navigation through or under it reasonably free, easy, and unobstructed, stating in such notice the changes required to be made, and prescribing in each case, a reasonable time in which to make such changes, and if at the end of the time so specified the changes so required have not been made, the persons owning or controlling such bridge shall be deemed guilty of a violation of this Act; **and all such alterations shall be made, and all such obstructions shall be removed at the expense of the persons owning or operating said bridge.**

Sec. 5. That any persons who shall fail or refuse to comply with the lawful order of the Secretary of War or the Chief of Engineers, made in accordance with the provisions of this Act, shall be deemed guilty of a violation of this Act, and any persons who shall be guilty of a violation of this Act, shall be deemed guilty of a misdemeanor and on conviction thereof shall be **punished** * * * * * * by a fine not exceeding five thousand dollars, and every month such persons shall remain in default shall be deemed a new offense and subject such persons to additional penalties therefor; **and in addition** to the penalties above described, the Secretary of War and the Chief of Engineers may, upon refusal of the persons owning or controlling any such bridge and accessory works to comply with any lawful order issued by the Secretary of War or Chief of Engineers in regard thereto, cause the removal of such bridge and accessory works at the expense of the persons owning

or controlling such bridge, and suit for such expense may be brought in the name of the United States against such persons, and recovery had for such expense in any court of competent jurisdiction; and the removal of any structures erected or maintained in violation of the provisions of this Act, or the **order or the direction of the Secretary of War or Chief of Engineers made in pursuance thereof may be enforced by injunction, mandamus, or other summary process,** upon application to the Circuit Court in the district in which such structure may, in whole or in part, exist, and proper proceedings to this end may be instituted under the direction of the Attorney-General of the United States at the request of the Secretary of War; and in case of any litigation arising from any obstruction or alleged obstruction to navigation created by the construction of any bridge under this Act, the cause or question arising may be tried before the Circuit Court of the United States in any district which any portion of said obstruction or bridge touches.

Secs. 6 & 7 limit time for completion and define "persons."

Sec. 8. That the right to alter, amend, or repeal this Act is hereby expressly reserved as to any and all bridges which may be built in accordance with the provisions of this Act, and the United States shall incur no liability for the alteration, amendment, or repeal thereof to the owner or owners or any other persons interested in any bridge which shall have been constructed in accordance with its provisions.

Four Classes of Structures.

We submit that there is a broad distinction as to the status of the several classes of bridges or structures that have been completed under lawful authority:

1. *By authority of a state before Congress in any manner exercised control.*

The Wheeling Bridge, 13 How. 518.
Union Bridge, 204 U. S. 364.
Monongahela Bridge, 216 U. S. 177.

2. *By authority of a state, as to which Congress has invited investment and indirectly sanctioned so that "it does not lie in the power of a state or of the United States to say that such * * * was an obstruction and wrongfully there."*

Monongahela Co. v. U. S., 148 U. S. 335.

3. *By direct authority of Congress,* but subject to a reservation of power, (a) *to alter without liability on the Government,*

Bridge Co. v. United States, 105 U. S. 470.

Or (b) to alter and amend, so as to prevent or remove all material obstructions to navigation."

Hannibal Bridge Co. v. United States, decided May 15, 1911. Case No. 100, October Term of Supreme Court, 1910.

4. *By authority of Congress, where* "the conditions and limitations" are precribed, upon compliance with which, the bridge is declared *a lawful structure, not to be interferred with by* river navigation; and *no right to alter or amend is reserved.*

United States v. Parkersburg Branch Co. and B. & O. R. R. Co., 143 Fed. 224; 74 C. C. A. 350.

Penna. v. Wheeling & B. Co. 18 How. 421, 426, 430.

Monongahela Navigation Co. v. United States, 148 U. S. 312.

"In the matter of the Bellaire Bridge across the Ohio River." Opinion, of Attorney General Griggs February 14, 1899, 22 Opinions of Attorneys General, 343, 348.

"In the matter of the Parkersburg and other Bridges." Opinion of Attorney General Moody, July 15, 1904, 25 Opinions of Attorneys General, 194.

The Attorneys General respectively had under consideration the question involved in our present case.

Attorney General Griggs writes with regard to Bridge Co. v. U. S., 105 U. S. 470: "This decision was rested entirely upon fact that the right to require such alterations and modification was expressly reserved in the Act. * * * In view of the principle of that decision and upon ordinary principles of justice, in the absence of such a reservation, and subsequent requirement by Congress that the Company should change or modify its plan, whereby additional cost and expense are imposed upon it,—it would be essentially a *taking of private property for public use without just compensation,* as was said by Mr. Justice Field in his dissenting opinion in that case.

"There is a general principle of justice pervading our law, and the laws of all free governments, which requires that whoever unlawfully and wrongfully imposes upon another the necessity of an unusual expenditure of money or labor or material for the protection and preservation of his property, shall make complete indemnity for the expenditure. The principle

applies as fully to the acts of the Government as to those of individuals."

22 Opinions, page 346.

This opinion concludes, page 347: "The Act of 1890 must be construed to apply to only such bridges as are constructed under the authority of an Act of Congress, either the Act of 1872 or a special act, *which expressly reserved* to Congress the right to require changes or modification in the future."

Attorney General Moody delivered the opinion of July 15, 1904, in response to an Act of Congress which required him to furnish "an opinion upon the question whether the owners of bridges upon the Ohio River which are an impediment to navigation, or any of them, can be required under existing laws to make the necessary changes at their own expense; and if further legislation is required, whether the owners of such bridges or any of them can be required to make such changes at their own expense, or whether any of them must be borne by the United States."

Mr. Moody held that "the owners of bridges constructed across the Ohio River under the Act of July 14, 1862, (12 Stats. 596) which contained no reservation of power in Congress to alter, amend or repeal the act so as to prevent or remove obstructions to navigation arising from the construction of bridges thereunder, cannot be required to alter or modify them at their own expense without compensation."

25 Opinions, 194.

He concurs with Attorney General Griggs, whose opinion covered Section 4 of the Act of September 19, 1890, "which was superseded by Section 18 of the Act of

March 3, 1899, conferring like authority upon the Secretary of War in respect to bridges," and decided that such act would not be sufficient authority to warrant the Secretary of War in requiring changes to be made at the expense of the owner without compensation, and he says the same conclusion reached by Mr. Griggs must be reached in regard to the Act of March 3, 1899,—"so far therefore as the bridges here in question are concerned, this leaves Section 18 of that Act applicable only to those erected under the Acts of December 17, 1872, and February 14, 1883."

25 Opinions, pp. 194, 212.

It is a fact agreed, that the Parkersburg Bridge was completed in 1871, and was erected under the Act of July 14, 1862.

It is hardly material, in our view, to refer to these acts shortly following the completion of this bridge, but we trace their history.

History of Congressional Legislation Respecting Ohio River Bridges.

The first Act after July 14, 1862, which the Government claims to apply to the Parkersburg Bridge, was that of December 18, 1872, to authorize the construction of bridges across the Ohio River, etc. (17 Stats. 398, quoted at page nineteen of record.) It made no reference to any former act or any existing bridge. It related in terms to "future bridges" and reserved the right to alter or amend "this Act," without any liability on the Government for damages on account of the alteration, amendment, etc.

This Act was passed after report had been made by

the Board of Engineers in May, 1871, (Record p. 35) stating that no change should be made in the Bellaire or Parkersburg Bridges; and if at any time such change should become necessary, the expense should be borne by the National Government. (Record p. 57.)

This right to amend "without liability," occurring in the Act of 1872 as to future bridges, strongly indicates the sense of Congress that it was not only necessary, to reserve the right to make alterations, but to provide expressly, that if the right to amend should be exercised, no liability should be incurred by the Government.

That same clause was in the resolution of 1869, considered in Bridge Co. v. United States, 105 U. S. 470, but that case had not in 1872 been decided, because the decision was announced in 1881.

The next legislation was the Act of February 14, 1883, 22 Stats. 414, (Record p. 19,) providing for bridges "hereafter erected across the Ohio River," and reserving the right to alter and amend.

Next is the Act of August 11, 1888, 25 Stats. at Large, 499, Vol. 1 Supplement Revised Statutes, Second Edition, chapter 229, page 466, providing, Sec. 8, "That whenever the Secretary of War shall have good reason to believe that any railroad or other bridge now or hereafter to be constructed, is an obstruction, it shall be the duty of the Secretary of War, etc. * * * provided that no greater sum than *fifteen thousand dollars* shall be required to be expended upon any bridge in a single year." This Act could not apply to the Parkersburg Bridge, the alteration of which would cost over half a million dollars; it might apply to any bridge alterable at the limited figure and constructed under an Act made with the reservation to require alterations.

The Act of 1888 was amended by the Act of September 19, 1890, 26 Stats. 426, Vol. 1, Supp. R. S., Second Edition, chap. 907, p. 800; and the enactment in 1890 is that "the erection of any obstruction, not affirmatively authorized by law, to the navigable capacity of any water in respect to which the United States has jurisdiction, is hereby prohibited, etc.;" and this Act is substantially the same as that of 1899.

United States v. Rio Rrande Dam Co., 174 U. S. 690, 708.

When we compare these bridge statutes, as grouped by Chief Justice Waite in 105 U. S., at pages 476 and 477, or take them in their consecutive order, we find that Congress recognized the injustice and the unconstitutionality of improving a river at the expense of those who would be induced to invest, in supplying this new method of carrying commerce across the upper waters of navigable rivers.

In 1862 "no iron-truss bridge of 300-foot span had been built in this country." The Report of Engineers Record p. 40.)

From Cincinnati to Pittsburg is nearly five hundred miles, and the bridge at Cincinnati was not authorized until 1869.

Only two bridges were erected on the faith and reliance of this Act of 1862,—both built by this defendant, at Bellaire and at Parkersburg.

Congress legalized the Wheeling bridge in 1852, and the Steubenville bridge in 1862, indicating a purpose to encourage such enterprises. The pioneers needed inducements. All of these Acts were passed with an eye to the Wheeling Bridge case; different terms were imposed for the respective localities. When the right

to alter or amend first appeared, it was itself limited and restricted to the necessity of navigation; so that if it should be found, in the progress of the construction, or in the practical operation after completion, that the bridge was an undue obstruction, Congress might make a fair adjustment, limited to the necessity of the case; and the Supreme Court, in 105 U. S. 470, barely exonerated the Government, after it had made the reservation with an express disclaimer of liability.

At Pittsburg, the Monongahela and Allegheny Rivers form the Ohio. As Congress extended Federal control until it covered all of the navigable waters IN the United States, even those situated wholly within a given state, the power of Congress reached the bridges across those two rivers,—as considered in 204 U. S. 364 and in 216 U. S. 177.

Like conditions were being developed throughout the extent of National territory. Waters that had been improved by the Government, were obstructed by structures in and across them.

The unrepealable Act of 1862 had demonstrated the method of successful bridge building, by continuous spans of great elevation. After the demonstration was made, it was determined, as embraced in the Act of December, 1872, to reserve a power of control; and thus, for a generation, *the Bellaire and Parkersburg Bridges had stood, with the approval and commendation of the Government,* until after the Act of 1899 was passed.

The Secretary of War desiring to do his full duty, inquired of the Attorney General, whether he should seek to alter the Bellaire Bridge, and it was decided that he had no such power.

22 Opinion, 346.

Again, in 1902, Congress called on the Secretary of War for physical facts, and on the Attorney General, to define the rights and powers of Congress regarding these Bridges; and again, these bridges, under the Act of 1862, are held to be exempt from the Acts of 1890 and 1899, by Mr. Justice Moody. (25 Opinions, 194.)

As far as precedent could reach, the decision in 18 Howard 421, fixed the construction of this statute of 1862, in holding; that a bridge declared a lawful structure by Congress, could not be held an obstruction until Congress itself should declare it such, and that meantime the physical fact could not make an obstruction in law. Then, in 105 U. S. 470, the court held that the authority of Congress for the building of a bridge, is a franchise and a valuable property; but that where the right to revoke, or to alter, or to withdraw the consent of Congress, is reserved,—there it is a defeasible right or franchise; and in Monongahela Co. v. United States, 148 U. S. 312, 355, that case is reviewed, and it is again affirmed that the Government is bound by the implied consent of Congress.

Next, the doctrine is recognized in Union Bridge Co. v. United States, 204 U. S. 364, where the court says, at page 400, after referring to the fact that the Government had in no wise sanctioned or acquiesced in the building of the Union Bridge, which existed solely by virtue of an Act of the Legislature of Pennsylvania, providing that the bridge should be so constructed as not to obstruct the navigation of said river, etc.,—Mr. Justice Harlan writing, p. 400:

"There are no circumstances connected with the original construction of the bridge, or with its maintenance since, that so tie the hands of the Government, that it cannot exert its full power to protect the freedom

*of navigation against obstruction. * * * * * It must be taken not only that the Company when exerting the power conferred upon it by the state, did so with knowledge of the paramount authority of Congress to regulate commerce, but that it erected the bridge subject to the possibility that Congress might, at some future time, when the public interest demanded, exert its power by appropriate legislation to protect navigation against unreasonable obstruction.''*

The subsequent case of the Monongahela Bridge, 216 U. S. 177, adds nothing to the one last cited. It re-affirms the Union Bridge Co. case, and concludes, 216 U. S. 195, in response to extreme possibilities of reckless conduct on the part of the Secretary of War; "it will be time enough to deal with such cases as they arise, sufficing to say that the courts have rarely, if ever, felt themselves so restrained by technical rules, that they could not find some remedy consistent with the law, for acts, whether done by government or by individual persons, that violated natural justice or were hostile to the fundamental principles devised for the protection of the essential rights of property."

Justices Peckham and Brewer dissent from the opinion in the Union Bridge Co. case, and Mr. Justice Moody did not sit.

In the Monongahela Co. Bridge case, 216 U. S. 195, Mr. Justice Brewer again dissents.

In Hannibal Bridge Co. v. United States, decided May 15, 1911, no proposition is advanced that touches the Act of July 14, 1862, because that bridge was built under the Act of July 25, 1866, where the right to alter or amend was reserved, in these words:

Section 13. Be it further enacted, that the right to alter or amend this Act, so as to prevent or remove all material obstructions to the navigation of said river, by the construction of bridges, is hereby expressly reserved"—

These two Acts, passed eleven days apart, one for the mighty Mississippi, and one for the upper waters of its tributary, differ materially.

The cases of Union Bridge (204 U. S.) and Monongahela Bridge (216 U. S.) do not control this Parkersburg Bridge.

We submit that the Parkersburg Bridge is not to be ruled by the twin cases of the Union Bridge Co., 204 U. S. 364, and the Monongahela Bridge, 216 U. S. 177, which are substantially identical, and amount to one decision.

In the Union Bridge case, 204 U. S. 346, the majority opinion is founded and predicated upon the following facts:

1. The Company was authorized by the Legislature of Pennsylvania, in 1873, to bridge the Allegheny River, with this proviso: "That the erection of said bridge shall not obstruct the navigation of said river so as to endanger the passage of rafts, steamboats, or other water crafts, and the piers shall not be so placed as to interfere with tow-boats proceeding with their tows made up, and shall be constructed in such manner as to meet the requisitions of the law in regard to the obstructions to navigation." The bridge was completed, and has been in use since 1875. (p. 367.)

In December, 1901, The U. S. Engineer's Report was filed, stating that the bridge was an obstruction, and that alterations were necessary, as specified. That a hearing had been had and time allowed for making the alterations. (pp. 369 and 370.)

In January, 1903, Secretary Root gave notice, requiring the alterations to be made within eighteen months. Upon application to Secretary Taft, successor to Mr. Root, a re-hearing was denied, and the facts are stated, as found by Secretary Taft, including the following: "The Union Bridge at the mouth of the Allegheny was erected at a time when the Secretary of War was not given specific control over navigable streams, and was not authorized to inhibit the construction of bridges which were likely to obstruct navigation, but an Army Engineer, Col. Merrill, in charge of the District, publicly announced that this bridge was an obstruction to navigation when it was erected. *It was erected, therefore, in the face of information given by the best authority that could be consulted in that matter, in the Government.*" (pp. 371-2.)

It is adjudicated that this bridge had no Federal sanction, direct or indirect. Opinion, p. 400.

At the risk of censure, for repetition, we contrast the situation of the Union Bridge, built against protest and warning, under the sole authority of a state, requiring in general terms that the bridge must not obstruct navigation—with our Act of 1862, which emanated from the highest Federal authority, and specified with particularity what should be done in the building of the bridge, and then gave the mandatory law, that navigation must not interfere with that bridge, which is admitted to be wholly within the terms of the Act, and a lawful structure.

We have the unqualified, unlimited, unconditioned, and absolute right and property, proceeding from the National Government.

The status of the Union Bridge bears no comparison

with that of the one at Parkersburg. We have heretofore pointed out that the rights of the defendant with regard thereto, have been indicated by the numerous Acts of Congress passed before and since the Act of 1862; by the decisions of the courts, and by the construction of the department of Justice and the Executive.

The Parkersburg Bridge is beyond the purview and influence of all decisions touching bridges erected, without Federal authority, or erected under an Act of Congress, which reserves the right to alter the franchise or the physical structure.

An opinion in a particular case founded on its special circumstances, is not applicable to cases under circumstances essentially different.

Brooks v. Marbury, 11 Wheat. 78.

General expressions in every opinion are to be taken in connection with the case in which they are used. If they go beyond the case they may be respected, but ought not to control the judgment in a subsequent suit *when the very point is presented for decision.* The reason of this maxim is obvious. "The question actually before the court is investigated with care and considered in its full extent. Other principles which may serve to illustrate it are considered in their relation to the case decided; but their possible bearing on all other cases is seldom completely investigated."

Cohens v. Virginia, 6 Wheat 264;
Weyerhauser v. Hoyt, 219 U. S. 380, 394.
Follett v. Farmers Loan Co., 157 U. S. 429, 574;
Downes v. Bidwell, 182 U. S. 244;
Harriman v. Northern Securities Co., 197 U. S. 244, 291.

Vested Rights.

The status of the bridge as a lawful structure when authorized by congress, is emphatically stated in the Wheeling Bridge case, 18 Howard, 421, at page 430,— "Since, however, the rendition of this (former) decree, the Acts of Congress have been passed, by which the Bridge Company has been made a post-road for the passage of the mail, and the defendants are *authorized to have and maintain it, and require all persons navigating the river to regulate such navigation so as not to interfere with it.* So far therefore, as this bridge created an obstruction to the free navigation of the river; in view of the previous Acts of Congress, they are to be regarded as modified by this subsequent legislation, and although it still may be an obstruction in fact, it is not so in the contemplation of the law. * * * * * * * * * *"

In Navigation Co. vs. United States, 148 U. S. at page 341, it was held, that when the supreme power assumes control of the river, it does not destroy both the right of the Company to have its property there and the franchise to take toll. "The franchise is a vested right. The state has power to grant it. It may retake it, as it may take other private property for public uses, upon the payment of just compensation."

This, of course, referred to a state franchise; and a fortiori, it would apply to a right under a federal statute.

In Pearsall v. Great Northern Railroad Co., 161 U. S. at page 662, the opinion says—"Indeed, the sanctity of charters vesting in grantees the *title to land or other property,* has been vindicated in a large number of cases. Davis v. Gray, 83 U. S. 16; Fletcher v. Peck, 6 Cranch, 87; Noble v. Union Logging Co., 147 U. S. 165."

The opinion (161 U. S. 662) then quotes, with approval, Piqua Bank v. Kanoop, 16 How. 369;—"Every valuable privilege given by the charter and which conduces to an acceptance of it, and an organization under it, is a contract, which cannot be changed by the Legislature, where the power to do so, is not reserved. The rate of discount, the duration of the charter, the specific tax to be made, and other provisions essentially connected with the franchise and necessary to the business of the company, cannot, without its consent, become a subject for legislative action. * * * (At page 663,) if the company be chartered with power to construct and maintain a turnpike and collect tolls, such franchise is protected by the Constitution. St. Clair County Turnpike v. Illinois, 96 U. S. 63; Monongahela Nav. Co. v. United States, 148 U. S. 312. * * * In each of the above cases (p. 664) the title to property had either become vested in the grantee by operation of law, or the exercise of the power granted was so far necessary to the full enjoyment of the charter, that persons subscribing to the stock would be presumed to take into consideration the fact that the corporation was endowed with those privileges during the continuance of the charter." * * * At page 673, "as applied to railroad corporations, it may reasonably be contended that the term 'vested rights' extends to *all rights of property by executed contracts,* as well as to all such rights as are necessary to the full and complete enjoyment of the original grant."

In United States v. Union Pacific R. R. Co., 160 U. S. 1, the defendant Railway Co. was a Federal corporation, and *the right of amendment had been reserved under the several Acts of Congress defining its rights, duties and powers.* The opinion, page 33, reads:

"No express limitation is imposed upon the exercise of the power so reserved, except that the Act of 1862 required that due regard be had to the rights of the Railroad Companies that accepted its provision; but it is

clear that there was no purpose to interfere with the authority of Congress to enact such law by way of addition to, or alteration of, existing legislation, as were necessary or conducive to the attainment of the public objects sought to be attained. * * * It would not be competent for Congress under the guise of altering and amending the Act to impose upon the Railroad Company duties wholly foreign to the objects for which it was created, and for which governmental aid was given. Neither could it by such *alteration or amendment destroy rights actually vested,* nor disturb transactions fully consummated. We may here not inappropriately repeat what was said in Union Pacific Railroad Co. v. United States (Sinking Fund Cases), 99 U. S. 700, 718-720, that 'this power has a limit' and 'cannot be used to take away property already acquired under the operation of the charter, or to deprive the corporation of the fruits actually reduced to possession by contracts lawfully made. Again, in the same case, *the United States cannot,* no more than a state, interfere with private rights, except for legitimate governmental purposes. They are not included within the constitutional prohibition, which prevents states from passing laws impairing the obligation of contracts; *but equally with the states* they are prohibited from depriving persons or corporations of property without due process of law. They cannot legislate back to themselves, without making compensation, the lands they have given this corporation. * * * Neither can they by legislation compell the corporation to discharge its obligation in regard to the subsidy bonds, otherwise than according to the terms of the contract already made in that connection. *The United States are as much bound by their contract as are individuals.* If they repudiate their obligations, it is as much repudiation, with all the wrong and reproach that term implies, as it would be if the repudiator had been a state, a municipality or a citizen. No change can be made in a title created by the grant of the land, or in the contract for the subsidy bonds,

without the consent of the corporation. All this is indisputable." 160 U. S. 34.

In the Sinking Fund cases, 99 U. S. 700, the question was upon the power of Congress under the right of amendment, alteration or repeal, reserved in certain acts. We have quoted from the opinion of the majority, as pronounced by Chief Justice Waite; but from so much of that opinion as upheld the validity of the Acts in question, Justice Field, Strong and Bradley dissented, on the ground that the amendatory acts went beyond the limits of a fair exercise of the power, which is restricted by the principles of the Dartmouth College case, 4 Wheat. 675, even where the Legislature reserves the right to alter, amend and repeal, so far as the amending act would destroy property or vested rights.

Federal Franchises.

In California v. Pacific Railroad Company, 127 U. S. franchises conferred by Congress were liberally considered—not only from the standpoint of Federal creation, but also with reference to rights and powers granted by the Federal Government to creatures of the state.

The opinion, 127 U. S., at page 35, notes, "the Central Pacific R. R. Co. was constituted by the consolidation of two state corporations in California, but derived many of its franchises and *privileges from the Government of the United States.*" And, again, at page 38, "If we turn to the Acts of Congress referred to by the court, we shall find that franchises of the most important character were conferred on this company * * * Congress, by the Act of 1862, authorized the Company 'to construct a railroad and telegraph line from the Pacific Coast * * * to the eastern boundary of California * * * and to meet and connect with the first mentioned rail-

road and telegraph line.'" Again, "it was enacted, that after the completion of its road to California * * * the Central Pacific may unite upon equal terms with the Union Pacific R. R. in constructing so much of said railroad and telegraph line * * * from the State of California to the Missouri River as should then remain to be constructed. Thus without regard to other franchises and privileges conferred upon this property, the fundamental franchise was given by the Act of 1862 and subsequent Acts to construct a railroad from the Pacific Ocean across the State of California and the Federal Territory until it should meet the Union Pacific. This important grant, though in part collateral to, *was independent of*, that made to the Company by the State of California."

And, again, "If therefore (p. 39) the Central Pacific R. R. Co. is not a Federal Corporation, its most important franchises, including that of constructing a railroad from the Pacific Ocean to Ogden City, were conferred upon it by Congress. It cannot at the present day be doubted that Congress, under the power to regulate commerce among the several states, as well as to provide for postal accommodations and *military exigencies*, had authority to pass these laws. The power to construct, or to authorize individuals or corporations, to construct National Highways and bridges from state to state, is essential to the complete control and regulation of interstate commerce. Without authority in Congress to establish and maintain such highways and bridges, it would be without authority to regulate one of the most important adjuncts of commerce. * * * But since in consequence of the expansion of the country, the multiplication of its products, and the invention of railroads and locomotion by steam, the land transportation has so vastly increased, and sounder consideration of the subject has prevailed and led to the conclusion that Congress has plenary power over the whole subject."

At page 40, "But may California tax franchises which are the grant of the United States? In our judg-

ment, it cannot. What is a franchise? Under the English law Blackstone defines it as 'a royal privilege, or branch of the king's prerogative, subsisting in the hands of a subject.' 2 Bl. Com. 37. Generalized, and divested of the special form which it assumes under a monarchial government based on feudal traditions, a franchise is a right, privilege or power of public concern, which ought not to be exercised by private individuals at their mere will and pleasure, but should be reserved for public control and administration, either by the government directly, or by public agents, acting under such conditions and regulations as the government may impose in the public interest, and for the public security. Such rights and powers must exist under every form of society. They are always educed by the laws and customs of the community. Under our system, their existence and disposal are under the control of the legislative department of the government, and they cannot be assumed or exercised without legislative authority. No private person can establish a public highway, or a public ferry, or railroad, or charge tolls for the use of the same, without authority from the legislature, direct or derived. * * No person can make themselves a body corporate and politic without legislative authority. Corporate capacity is a franchise. The list might be continued indefinitely."

In Southern Pacific Railroad Co. v. United States, 183 U. S. 527,—"it is well settled that Congress has power to grant to a corporation created by a state, additional franchises,—at least franchises of a similar nature. Sinking Fund Cases, 99 U. S. 700; Pacific Railroad Co. Removal Cases, 115 U. S. 1; California v. Central P. R. R. Co., 127 U. S. 1; United States v. Sanford, 161 U. S. 412; Central P. R. R. vs. California, 162 U. S. 91."

In Pacific Railroad Co. Removal Cases, 115 U. S. 2, the court finds that the Union Pacific Railroad Co. is, as to its road, property and franchises in Kansas, a corpor-

ation de facto created under Acts of Congress; and as to that Company in Nebraska, it is strictly and purely a corporation deriving all of its corporate and other powers from Acts of Congress, while the Texas & P. R. R. Co. is also a corporation deriving its powers from Congress.

Our contention is that a franchise or grant made by Congress, whether of mere rights and privileges, or of land and property in aid of a public purpose, can no more be recalled and cancelled by Congress without compensation and indemnity than can similar rights and property conferred by a state, be impaired by subsequent legislation of the state. It is true that the state is inhibited from such conduct by a provision of the Constitution that does not apply to Congress; but that principle is as much binding on the United States as a matter of natural right, as though the Federal Government had been disabled by direct prohibition in its organic law.

The vested rights of the defendant regarding this bridge, included the property acquired, by complying with the conditions and limitations prescribed by Congress, and in furnishing a needed public improvement actually used by the government. (161 U. S. 673.)

Corporate franchises are legal estates and not mere naked powers granted to the corporation, but powers conferred or interests which vest in the corporation by virtue of its charter.

Provident Institute v. Mass., 6 Wall. 61.

A franchise is property, and subject to all the rules of property.

West River Bridge Co. v. Dix, 6 How. 507.

Among the rights granted by the United States in regard to this bridge, was by implication the right *to take tolls*—"Sec. 5: That any bridge * * * erected

under the provisions of this act shall be a lawful structure * * * upon which, also, no higher rate shall be made * * * than the rate per mile which the Company may from time to time receive on the balance of their line for such services." Act of July 14th, 1862.

Under the alternative of abandoning the bridge or of rebuilding it, the right to tolls is put at stake.

If the franchise and the property acquired under it, is protected, even when the government is estopped merely by invitation to declare it unlawful, (Monongahela Nav. Co. v. United States, 148 U. S. 355); it is fair to assume that the estoppel is stronger and ties the hands of the government more securely (204 U. S. 400), where guarantees are given so large, as under this Act of 1862.

When, therefore, we find that this indictment is aimed to deprive the defendant of a part of its bridge, which the Government does not propose to use, we are clearly within the principle of the cases of United States v. Lynah, 188 U. S. 445; Pumpelly v. Green Bay Co., 13 Wall. 166; Monongahela Nav. Co. v. United States, 148 U. S. 312; United States v. Grizzard, 219 U. S. 180; United States v. Welch, 217 U. S. 333; Missouri Pacific Railway Co. v. Nebraska, 217 U. S. 196;—and when we come to the other feature, of compelling this defendant to pay over five hundred thousand dollars, not for its benefit, nor for any duty it owes to the public, nor yet to render its service better or more efficient—we are directly within the principle of Mo. P. R. R. v. Nebraska, 217 U. S. 196, deciding, there are constitutional limits as to what can be required of railroads under the police power. Requiring the expenditure of money, *takes* property whatever may be the ultimate return for the outlay.

"There is no provision in the Statute for compensation to the railroad for its outlay in building and maintaining the side tracks required, (page 205.) The initial cost is four hundred and fifty dollars in one, and seventeen hundred and thirty-two dollars in the other; and to require the Company to incur this expense inequitably does take the property, whatever may be the speculations as to the ultimate return for the outlay. Woodward v. Central W. Railway Co., 180 Mass. 599."

Also, at page 206, "railroads can be required to fulfill the purposes for which they are chartered, and to do what is reasonably necessary to serve the public * * * without compensation, for the performance of some part of their duties, that does not pay. * * But railroads, after all, are property, protected by the Constitution, and there are constitutional limits as to what can be required of their owners, under either the police power or any other ostensible justification for taking such property away."

(217 U. S. 206.)

This defendant is required to make this forced contribution of over five hundred thousand dollars, for the public improvement of the river, and for advancing the interests of navigators, who were commanded by Congress to avoid interference with this bridge or the use thereof.

"Requiring the expenditure of money, is to take property whatever may be the ultimate return for the outlay."

Mo. P. R. R. Co. v. Nebraska, 217 U. S. 196.

This defendant can get no return for the outlay.

In United States v. Welch. 217 U. S. 333, the opinion by Mr. Justice Holmes, is, page 338—"it is admitted that the strip of three acres was taken and is to be paid for. It was permanently flooded by a dam. United States v. Lynah, 188 U. S. 445; Manigault v. Springs, 199 U. S. 473. The plaintiffs owned other land adjoining the strip taken, and had a private right of way at right angles to the creek. * * *This was the only practical outlet from his farm. The taking of the intervening strip cut off the use of the way, and the Judge who tried the case found that it lessened the value of the farm $1,700.00, and he allowed this in addition to $300.00 for the land taken. * * * But both the petition and finding in substance show clearly that the way has been permanently cut off. * * * We perceive no reason that it should not be held to be acquired by the United States as incident to the fee for which it admits that it must pay; but if it were only *destroyed and ended*, a destruction for public purposes may as well be a taking as would be *an appropriation* to the same end. Miller v. Horton, 152 Mass. 540, * * * The argument is only confused by reference to cases like Gibson v. United States, 166 U. S. 269; Harvard College v. Stearns, 15 Gray 1, &c., where it was held although there are decisions the other way, that a landowner cannot recover for the obstruction of a public water course, the discontinuance of a public way, or the like."

This decision declares the principle that where a property is destroyed for public purposes, it shall be treated as taken, and that this principle applies not only to lands that are overflowed, but to rights that are sacrificed for the public benefit.

The Welch case last cited, is affirmed in United States v. Grizzard, 219 U. S. 182.

We submit that the rights of the defendant are measured under the rule, and within the line of these several

cases, which declare the right of property, and the protection thereof, against either invasion, appropriation or destruction; and it follows, that Congress has not the power, in this instance, by the Act of 1899 to cause this alteration; and we may mention, incidentally, that it is not due process of law, to have a military officer and the Secretary of War, either to impair our rights vested under the Act of 1862, or to set at naught and reverse the decision of the Court of Appeals on that question. 74 C. C. A. 354.

In U. S. vs. Lynah, 188 U. S. 445, a case involving the right of Congress to regulate commerce, the Court says:

"But if any one proposition can be considered as settled by the decisions of this Court it is that, although in the discharge of its duties the government may appropriate property, *it cannot do so without being liable to the obligation cast by the Fifth Amendment of paying just compensation.*" (At p. 471.)

"Undoubtedly compensation must be made or secured to the owner when that which is done is regarded as a taking of private property for public use within the meaning of the Fifth Amendment of the Constitution; and of course in its exercise of its power to regulate commerce, Congress may not override the provision that just compensation must be made when private property is taken for public use." (At page 471-472.)

Having in view, the condition of the art and science of railroad bridge building, and the conditions of the country in the emergencies prevailing in 1862, and referred to in the statute, the reasoning in support of rights vested under exclusive franchises to persons sup-

plying a public need, has application here, with special reference to the point;

That the grant of a franchise, in consideration of the performance of a public service, creates a vested right of peculiar sanctity; and when once the condition has been complied with, the government can recall the right only upon compensation.

"A legislative grant of an exclusive right to supply gas to a municipality and its inhabitants through pipes and mains laid in the public streets, and upon the condition of the performance of the service by the grantee, is a grant of a franchise vested in the State, in consideration of the performance of a public service; and after performance by the grantee is a contract protected by the Constitution of the United States against State legislation to impair it."

New Orleans Gas Co. v. Louisiana Light Co. 115 U. S. 650.

In the case last cited, the exclusive privilege was upheld as a franchise granted by the state, on the ground that the grantee gave full consideration for the grant by supplying a public need, and the case concludes, page 673.

"If, in the judgment of the State, the public interest will be best subserved by an abandonment of the policy of granting exclusive privileges to corporations, other than railroad companies, in consideration of services to be performed by them for the public, the way is open for the accomplishment of that result, with respect to corporations whose contracts with the State are unaffected by that change in her organic law. The rights and franchises which have become vested upon the faith of such contracts can be taken by the public, upon just compen-

sation to the company, under the State's power of eminent domain. West River Bridge Co. v. Dix, 6 How. 507; Richmond, &c. Railroad Co. v. Louisa Railroad Co., 13 How. 71, 83; Boston Water-Power Co. v. Boston & Worcester Railroad, 23 Pick. 360, 393; Boston & Lowell Railroad Co. v. Salem & Lowell Railroad Co., 2 Gray, 1, 35. In that way the plighted faith of the public will be kept with those who have made large investments upon the assurance by the State that the contract with them will be performed."

To same effect, Vicksburg Water Works Co. 202 U. S., 453, Walla Walla v. Walla Walla Water Co. 172 U. S. 1.

The Act of 1899 Does Not Apply.

It seems, under Hannibal Bridge Co. v. United States (May 15, 1911), that where the power of amendment is reserved in an Act regarding bridges, then the Act of 1899 applies as an exercise of that reserved right on the part of Congress; but if it should be held that Congress has the power to compel the alteration of this Parkersburg bridge, where no right or amendment was reserved, then we respectfully submit Congress has not yet exercised that power, and the Act of 1899 was not intended to apply, and cannot be applied to this bridge.

The Act of 1899 *has been adjudged constitutional as to the class of cases to which it applies, but it does not follow that it takes effect in such way as to accomplish unconstitutional results, or that it was intended to apply to all cases within the letter thereof.*

Generalia Specialibus Non-Derogant.

Only two bridges were commenced and built under the Act of July 14, 1862, and upon the faith of it, above the Big Sandy River—one at Bellaire, and one at Parkersburg; but the Steubenville bridge was legalized under it. These three pioneer bridges are *sui generis*, and stand apart from all others. Shortly after their erection and completion, the Act of December 18, 1872, was passed, prescribing rules for bridges "hereafter erected."

"In construing any act of legislation, whether a Statute enacted by the Legislature or a Constitution established by the people * * * regard is to be had not only to all parts of the Act itself, or to any former act of the same law-making power, of which the act in question is an amendment, but also to the condition and to the history of the law as previously existing, and in the light of which the new Act must be read and interpreted."

United States v. Wong Kim Ark., 169 U. S. 649, 653.

In Lincoln v. United States, 202 U. S. 484, 496, Chief Justice Fuller, writes: "We ruled that the order of July 12, 1898, was a regulation for and during the then existing war with Spain, referred to *as definitely as if it had been named.* * * * Dooly v. United States, 182 U. S., 292."

"Where the Revised Statutes adopt the language of a previous statute which has been construed by this court, Congress must be considered as adopting that construction,—Congress having, in the Revised Statutes, adopted the language used in the Act of 1827, must be considered to have adopted also the construction given by the Court

to *this sentence,* and make it a part of the enactment. Sessions v. Romadka, 145 U. S. 29, 42."

Hence the act of July 14, 1862, must be construed in the light of the construction placed in the Wheeling Bridge case, 18 How. 426, on the language contained in the Act of 1852, legalizing that bridge.

In Petri v. Creelman Lumber Co., 199 U. S. 487, it is held that the special provision of an act of March 2, 1887, giving the Federal Court for either District in Illinois, jurisdiction * * * of a cause where two or more defendants reside in different districts in the state, is not repealed by the general language of the Act of March 3, 1887, as corrected by the Act of August 13, 1888, * * * although the latter Act contains a general clause repealing all laws and all parts of laws in conflict with its provisions.

Mr. Justice White says, p. 497, "It is elementary that repeals by implication are not favored, and that a repeal will not be implied unless there be an irreconcilable conflict. Especially does this rule apply where the prior law has a special act relating to the particular case or subject, and the subsequent law is general in its operation."

It will be observed that the Act of 1899 applies generally to bridges over navigable waters throughout the United States. Its terms are broad enough to include every bridge; but there is no clause that expressly repeals any former Act on that subject.

In Rogers v. United States, 185 U. S. 83, also pp. 87-8, the point is:—

"Where there are two statutes, the early special, and the latter general (the terms of the general being broad enough to include the matter provided for in the special), the fact that the one is special and the other is general,

creates a presumption *that the special is to be considered as remaining an exception to the general,* and the general will not be understood as repealing the special, unless a repeal is expressly named, or unless the provisions of the general are manifestly inconsistent with those of the special."

In Church of the Holy Trinity v. United States, an Act of Congress of February 26, 1885, to prohibit the importation and migration of foreigners and aliens under contract or agreement to *perform labor* in the United States—23 Stats. 332, chap. 164,—does not apply to a contract between an alien residing outside of the United States and a Religious Society incorporated under the laws of a state, whereby he engages to remove to the United States to enter the service of the Society as its Rector or Minister."

143 U. S. 457.

In construing an Act of Congress, the court says, in Lincoln v. United States, 202 U. S. 498: "This construction is favored by the consideration that the suits had been begun * * * * and even if Congress could deprive plaintiffs of their vested rights * * * still it is not to be presumed to do so, on language which literally taken has a narrower sense. Moreover, the Act of 1902 was passed *with full knowledge, and after careful consideration of the decisions of this court,* and Congress was aware that grave doubts at least had been thrown upon its power to ratify a tax under circumstances like the present. This affords a special reason for believing that if Congress had intended to encounter the limitations in that case (182 U. S. 1), it would have done so in clear words, from which there was no escape."

Applying this principle, we find that Attorney General Griggs, in February, 1899, delivered an opinion that

the bridge at Bellaire, being within the Act of 1862, could not be altered without compensation (22 Opinions, 343); and prior to that time, in Bridge Co. v. United States, 105 U. S. 470, the Supreme Court had almost made the Government liable, where the authority for building the bridge had been in broadest terms reserved.

"Where the construction of the language of the Statute is doubtful, courts will always prefer that which will confirm, rather than destroy, any bona fide transaction or title."

Griffith v. Bogert, 18 How. 158, 163.

No general terms intended for property to which they may be fairly applicable, and not particularly applied by the Legislature—no silent, implied and constructive repeals ought ever to be so understood as to divest a vested right.

Rutherford v. Green, 2 Wheat. 196, 203.

In Doddridge v. Thompson, 9 Wheat. 469, the court considered an Act of Congress of 1812, withdrawing a large scope of territory from military warrants; and it was held,—Chief Justice Marshall delivering the opinion —that that act could not affect any title acquired previous to the passage of the act;—holding, at page 479: "Had the plaintiff's title been acquired subsequent to the passage of this act, there would be much force in the objection to it; but it was acquired before this Act passed, and cannot, we think, be affected by it. Congress cannot have intended to annul by a legislative act, a title which was valid at the time; and a law which does not express that intention ought not have that effect given to it by construction."

9 Wheat. 469.

Congress having adopted in the Act of 1862, the language of the Wheeling Bridge Act of 1852, which was construed to vest the right of maintaining a bridge thereby declared to be a lawful structure—"must be construed to have adopted also the construction given by the Supreme Court to every *sentence,* and made it a part of the enactment."

Sessions v. Romadka, 145 U. S. 29.

The Legislature can never be presumed to destroy a vested right, and its acts ought never to be so construed as to subvert rights of property.

United States v. Fisher, 2 Cranch, 358, 390.
Lincoln v. United States, 202 U. S. 484, 498.

Numerous authorities are cited for these principles, in 11 Encyclo. Supreme Court Reports, p. 165—Title, "*Statutes.*"

It is not necessary to dispute the claim that Congress has the power to protect navigation and to keep navigation free of unreasonable obstruction, as well as to provide for transportation, communication and commerce by land and across navigable waters.

And it was settled sixty years ago that the determination of all such matters rested with the Congress.

Wheeling Bridge Case, 13 How. 566.

This was before the Government had directly aided the construction of railroads by gifts and subsidies, stretching across the continent.

Congress has the power to regulate the relations between one method of transportation over another, so as to get the greatest efficiency, and public service. In 1852

it determined to subordinate the commerce on the Ohio River, at Wheeling, to whatever inconvenience might arise from the maintenance of the Wheeling Bridge. Ten years later, Congress, in 1862, passed an Act that literally extended that policy down to the mouth of the Big Sandy River, making ample provision for all the needs of navigation, and turning a vast commerce across the river. That question was closed by the Act of July 14, 1862. We do not contend that Congress has not the power to make a new adjustment, by appropriate legislation. We can understand that the Government can proceed to condemn and take away this bridge, as under the right of eminent domain, in which case the right to compensaion is conceded. We can imagine circumstances under which a vast commerce, many times mutliplied, might so far exceed the importance of rail transportation—that Congress might conclude to reverse its judgment, and to sacrifice these bridges, to advance commerce by water; but we earnestly protest that before the judgment of congress is reversed, some direct action on its part is required; and it is monstrous to suppose that Congress would leave the complicated question of the respective importance of rail and river commerce, and the legal rights of the owners of these three bridges, once determined by Congress itself to be reheard and cancelled by any branch of the executive department.

This power to repeal was not reserved even to Congress.

The Act of 1899 is held Constitutional as to the powers conferred upon the Secretary of War, upon the ground, that by that Act Congress expressed its purpose and will, and left to the Secretary of War merely the application and the execution of that will.

But if the Secretary of War, under the Act of 1899, can hear and determine all questions, including the legal rights; if he can, by his action, reverse the status of that bridge as a legal structure authorized by Congress, and set aside the decree of the court defining those rights, then he is vested with a power that is paramount to the combined functions of Congress and of the Courts. Surely, Congress could not have intended to confer such power upon an administrative officer. The Act of 1899 is saved from objection on that ground by denying that any such power was conferred.

204 U. S. 364.

We submit that Congress passed on the identical question, in 1862 later assumed by the Secretary of War; because, it is a fact agreed, that the bridge has been unchanged, "and navigation under said bridge has, continuously since 1871, been and is, as free, easy and unobstructed, as when said bridge was completed and became a legal structure in 1871." (Record p. 12, paragraph 14.)

Can it not be said today, as in 18 How. 430; that Congress having *regulated navigation,* consistent with the preservation and continuance of the Bridge, the right to maintain it is complete, because there must be power, somewhere "in our system of government," to give stability; and unless Congress has the power, it does not exist.

The Act of 1899, provides that plans may be submitted to the Secretary of War for a proposed new bridge, to be approved by him.

Suppose this is done, and the plans are approved, and a costly bridge erected, say in 1911. Can a new Secretary, next year, remodel it at a cost of $500,000?

Suppose, in our present case, this defendent should expend $500,000, because the Secretary of War has ordered it, making a single span ; would the defendant be more secure, than when it complied with the only "condition and limitations" prescribed in the Act of 1862?

If it should be said, that under the Act of 1899, the power of the Secretary of War is continuing, and every bridge must be altered, whenever a new administration may become convinced of the necessity—toties quoties—then, we find a stronger ground for exempting the Parkersburg Bridge from the operation of that Act, because the Act of 1862, has the most permanent form known to American jurisprudence, in fixing no limits and making no reservation; and it provides for rates of toll that shall prevail as long as the railroad is operated.

Ladiga v. Roland, 2 How. 518; "It is a principle that has always been held sacred in the United States, that laws by which human action is to be regulated, look forwards, not backwards, and are never to be construed retrospectively, unless the language of the act shall render such construction indispensible."

In Pacific Mail Steamship Co. vs. Jolliffe, 2 Wall, 450 "when a right has arisen upon a contract * * * and has been so far perfected that nothing remains to be done * * the repeal of the statute does not affect it * * * It has become a vested right which stands independent of the statute."

In Great Northern Railway Co. v. United States, 155 Fed. 945,—84 C. C. A. 93, (affirmed 208 U. S. 452,) Van Devanter, Circuit Judge, states the rule at page 108, 84 C. C. A.—"to establish a supersession or repeal of a statute by implication, it is not sufficient to show merely that a later statute, making no mention of the particular

subject of the first, implies language broad enough to cover some part or all of it; for, as words are sometimes employed with less than their largest literal meaning, it must also appear that the two statutes cannot stand together, reasonable purpose and operation being accorded to each. Particularly is this true if the first expresses a settled policy in legislation. Wood v. United States, 16 Peters 342, 362; United States v. Gear, 3 How. 120, 131; Frost v. Wenie, 157 U. S. 46; United States v. Healey, 160 U. S. 136; Rosecrans v. U. S. 165, U. S. 257; United States v. Greathouse, 166 U. S. 601; McChord v. L. & N. R. R., 183 U. S. 483, 500. Or as the same thing is at times differently expressed, a statute couched in clear and explicit terms, is not overthrown by possible, but not necessary implications flowing from after-legislation."

In United States v. Greathouse, 166 U. S. 601, the court says, at page 605, "repeals by implication are not favored, and when two statutes cover in whole or in part the same matter, and are not irreconcilable, effect should be given, if possible, to both of them."

The Supreme Court, in the Hannibal Bridge case, May 15, 1911, announced no new principle in holding that where the right to alter, amend or repeal had been reserved, a general act would have the effect to exercise that power, without necessarily referring to the original act.

But when the act is meant to have permanent effect and is unlimited as to time, with no reservation or condition whatever thereto annexed, it may stand of itself, and be excepted from the operation of general laws.

It has been suggested, and it may be repeated, that after the Act of 1862 was passed, and after the Parkers-

burg Bridge was completed, that Act was superseded by the Statute of December 18, 1872, relating to bridges hereafter erected.

It is wholly inaccurate to use the word "supersede" in that connection, because in point of fact the act of 1872 did not touch, nor attempt to affect, a bridge already then complete. It is true that after 1862, Congress several times expressed the view and purpose that bridges across the Ohio should be constructed on a different plan from what had been specified in the Act of 1862; and for such future bridges, Congress superseded the old plan.

In other words, after our bridge was complete, and after we had demonstrated that such a bridge could be successfully operated, and after progress in bridge building showed that longer spans could be used, Congress superseded the old requirements, by making new specifications for subsequent bridges; but that did not repeal or supersede the force of the law of 1862, except so far as to affect subsequent structures. The plan of bridges was superseded, but the act still stood in full force. Our bridge remained a monument to faith in the Government's guaranties.

"Specific legislation upon a single subject, and a general law relating to that and other subjects, must stand together, unless clearly repugnant—the one as the law of the particular subject and the other as the general law of the land."

Christy Street Commission Co. v. United States, 136 Fed. 326; 69 C. C. A. 465.

In Wood v. United States, 16 Peters 362, Story, Justice writes: "Was the provision repealed by necessary implication? We say by necessary implication, for it is not sufficient to establish that subsequent laws cover

some or even all of the cases provided for by it (the prior law), for that may be merely affirmative, accumulative or auxiliary." Cited in McChord v. Louisville Co., 183 U. S. p. 500.

II.

The Government is estopped by the decision rendered before this indictment was found, in the suit in equity brought against this defendant in the same court—143 Fed. 224 - 74 C. C. A. 354 and the record was admissible in evidence.

The Circuit Court had full jurisdiction of the suit in equity, or information in chancery.

"An information in equity is proper, where the right to be asserted is vested in the government, as where it seeks to remove an obstruction from a navigable river."

1 Street Fed. Practice, Secs. 136-7-8.

The Wheeling Bridge Cases, 13 Howard 566, 567—

This bill in Equity was in the nature of a criminal proceeding, and the object and purpose of it, was to abate Pier No. 38, and to require an alteration of that bridge, by making one span from Pier 37 to 39, the same thing sought by the Bill of Indictment.

It pleads all of the statutes, and relies especially upon the Act of 1899.

"Although in the form of a civil action, this suit is in its essential character one to enforce, by injunction, *the penal and criminal legislation* of the state, against traffic in intoxicating liquors. * * * The primary purpose of the suit was to protect its citizens generally against the violation of its laws by the corporations or persons sued."

Oklahoma v. Gulf C. & S. F. R. P. Co., decided April 3, 1911.

Oklahoma v. Atchison R. R. Co., decided April 3, 1911, 220 U. S. 31.

As pointed out in the Oklahoma cases, a Bill in Equity to enjoin the violation of criminal statutes, partakes of a criminal proceeding, none the less from the fact, that equity is preventive and aims to repress the evil, and to enforce the laws, without inflicting the penalty prescribed by the law.

Recent decisions have affirmed the power of equity to deal with matters classed as criminal.

Generally, it has been held that equity cannot be used to suppress crime, or to enjoin prosecution for crime. And, yet, the abatement of nuisance on the one hand, and of unjust prosecutions on the other, are competent to equity jurisdiction.

In Ex parte Young 208 U. S. 162 "where one commences a criminal proceeding, who is already party to a suit then pending in a court of equity, if the criminal proceedings are brought to enforce the *same right that* is in issue before that court, the latter may enjoin the criminal proceedings. Davis & F. M. Co. vs. Los Angeles, 195 U. S. 209."

In Dobbins v. Los Angeles, 195 U. S. 223-241, Mr. Justice Day delivered the opinion of the court, that "it is well settled that where property *rights will be destroyed*, unlawful interference by criminal proceedings, under a void law or ordinance may be reached and controlled by a Decree of a Court of Equity. Smith vs. Ames 169 U. S. 466, distinctly enjoined proceedings by indictment, to compel obedience to the Rate Act."

We submit—

(1.) That after the decision was made in Equity, that the Act of 1899 could not be constitutionally enforced against this Bridge, (74 C. C. A. 354); the Court of Equity could have enjoined the prosecution of the Indictment, unless prevented by the rule denying the right to make the government a defendant.

(2.) That the Equity decision in the same court, could be used as well by way of defence, as the basis of an Injunction.

(3.) That the Young case, 208 U. S. 162, shows that equity and indictment, may both be used for the same purpose, of asserting a public right under a penal statute; and where the equity suit is already pending, the proceedings in both cases can be brought to the attention of the court to defeat the indictment, and

(4.) Where the Equity case has been decided against the validity of the law before the indictment is found, the right to enjoin the prosecution is stronger, than when the question is undecided; but as it is unseemly to enjoin a prosecution brought in the name of the United States, *the decision can be used in bar.*

This chancery suit was also essentially a proceeding in rem, to adjudge the status of the bridge, and to convict the company of maintaining a nuisance in regard to that pier, and to abate it, besides exacting money to alter it.

Comparing the issues in the equity case with the matters arising upon this indictment, the parties and the questions were identical—the property was the same, and so was the object of each proceeding.

In that Equity proceeding, it was settled that the

Bridge was a lawful structure, and that Congress could not deprive the defendant of its property therein without compensation.

When the United States invokes the jurisdiction of a court and submits a controversy, the decision is as binding on the government as it would be on a natural person.

United States v. Col. Land Co., 192 U. S., 355, 358.

United States v. Grady, 22 Wall. 641.

Buchanan v. Knoxville & O. R. R., 18 C. C. A. 129.

Gunter v. Atlantic Coast Line R. R., 200 U. S. 273, 292.

The United States can never be made defendant, except where consent is expressed by Congress.

United States v. Lee, 106 U. S. 196, 222.

We respectfully urge, that although, in the case at Bar, the proceeding is by Indictment, yet "a pleading in the nature of a criminal information" is good (Union Bridge case, 204 U. S. p. 265); and the proceeding being for the collection of a mere money penalty, it is not a criminal case at all.

Hence, we have a Decree in equity in a quasi criminal proceeding deciding every point and fact, which the Government subsequently puts in issue, by a quasi criminal or civil proceeding; or, we might put it the other way, as a Decree in Equity determining the rights of the parties, followed by a suit to collect a penalty, involving the same facts.

In State of Pennsylvania v. Wheeling Bridge Co., 13 Howard at page 566-7, the court declares "in the case

of the City of Georgetown v. The Alexandria Co. 12 Peters, 98, this court says that equity, pursuing the analogy of the law that a party may maintain a private action for damages, even in case of a public nuisance—equity will not take jurisdiction in case of a public nuisance."

The dissenting opinion of Chief Justice Taney in the Wheeling Bridge case at page 590 says, "I do not doubt the power of a court of chancery to abate a public nuisance, upon an information in chancery to which the Attorney General is a party * * * this in the doctrine of this court in the City of Georgetown v. Alexandria Canal Co. 12 Peters, 98." The dissenting opinion of Mr. Justice Daniel in the Wheeling Bridge case in 18 Howard at page 609 says, "that upon the complaint of a nuisance causing irreparable injury, a court of equity upon the admitted or notorious character of the act, would interpose by injunction. Such is the principle ruled by Lord Eldon, in the case of Attorney General v. Cleveland 18 Vesey, 211, which was upon an information by private persons for private injury, though in the name of the Attorney General; and by the same Judge in the case of Crowder v. Tinkler, in 19 Vesey, 617. Such also is the rule in the case of the City of Georgetown v. Alexandria Co. 12 Peters, 98."

In Crowder v. Tinkler, the court merely suspended the erection, until the question of nuisance could be tried by a jury upon an indictment.

We note the recognition of an information in chancery for the enforcement of criminal statutes and the abatement of a public nuisance; and we note particularly that in the Crowder case, Lord Eldon relegated to a jury by indictment, the trial of the issue of nuisance.

It seems impossible that the alleged general rule, that no evidence of a judgment or proceeding at law can be used in a criminal case, or vice versa—is applicable in these nuisance cases, especially where one court concludes to await the decision of another. It would be absurd to convict a party of nuisance after equity had decided that there was no nuisance; just as it would be absurd to enjoin a party from maintaining a bridge, after his right to maintain the bridge had been decided on the law side of the court.

And it would seem to follow, that if two proceedings are taken, one by an *information in chancery* to determine the status of a bridge as a nuisance, and then another "in the nature of a criminal information" (204 U. S. 365.) to punish the maintenance of the bridge, on the law side, it can hardly be said that these proceedings are so far foreign to each other, that the court which pronounced judgment in the first, information in chancery could take no cognizance thereof when called on to try the second information, at law.

The bill in the Wheeling Bridge case was maintained as being in the nature of an information, and the Supreme Court decided and heard without a jury, the entire question, as to whether or not that bridge was an obstruction that should be enjoined, and it decided that matter in the affirmative, without any proceeding at law, and without any jury.

Therefore, in the case of the United States vs. Balto. & Ohio R. R. 74, C. C. A. 354 where the bill was similar on behalf of the national government, the Circuit Court had power and jurisdiction to decide whether or not the Parkersburg Bridge was a nuisance, and that question was clearly and positively decided.

The Rule of Res Judicata.

Res judicata may render straight that which is crooked, and black that which is white—

Commissioners vs. League 129 U. S. 429.

"Stated generally, and without detail, the theory of the law is, that matters which have once been fully investigated between the parties and determined by the court, shall not be again contested * * * conclusive upon the parties and never subject to further injury. The whole doctrine has lately been gone over in this Court, in Southern Pacific R. R. vs. U. S., 168 U. S. 1; and the law in regard to it is so well settled, that other citations are not required. The question is, not what the doctrine is; but does it apply to the particular case?"

Baker v. Cummings, 181 U. S. 117, 124.

In United States v. Dalcour, 203 U. S. 408, Justice Holmes: "It has been decided that a Decree upon a Bill to have a patent declared void, as forfeited under an act of Congress, was a Bar to a subsequent bill for the same purpose, upon the different ground, that the land was excepted from the grant as an Indian Reservation. U. S. v. Col. Land Co., 192 U. S. 355. In that case it was intimated that in general a judgment is a bar to a second attempt to reach the same by a different *medium concludendi.*"

In this opinion, (192 U. S. at page 358,) occur these words as to suits by the Government: "On the general principles of our law, it is tolerably plain that the decree in the suit under the foregoing statute would be a bar. The *parties,* the *subject matter,* and the relief sought, all were the same. It is said the United States now is suing

in a different character from that in which it brought its former suit. There it sued for itself, here it sues on behalf of the Indians. But that is not true in any sense having legal significance * * * ."

A decision upon the merits deciding issues in Equity, under full pleading, is an estoppel upon the parties to the record, and is conclusive upon the matters adjudged, as to the points decided. If the judgment is admissible, it is *conclusive of all the matters determined by it, although it is not pleaded.*

So. Pac. R. R. vs. U. S. 168 U. S. 1.

In the case at bar, no pleading was required. If otherwise necessary it was waived, Rec. p. 14.

An issue determined by a Decree in Equity cannot be retried in a collateral action, although the evidence upon which the case was heard is in the record.

Franklin Co. v. Bank, 142 U. S. 93.

In Stone v. United States 167 U. S. 178, a civil action was brought to recover for timber unlawfully cut from land of the United States. The defendant defended on the ground that he had been indicted criminally, for cutting such timber, and was acquitted. It was held, of course, that the acquittal in the criminal case, was no defense in the subsequent civil action.

Mr. Justice Harlan at page 188:—"The rule established in Coffey's case, can have no application in a civil case not involving any question of criminal *intent* or of forfeiture for prohibited acts, but turning wholly upon an issue as to ownership of property. In the criminal case the government sought to punish a criminal offence, while in the civil case, it only seeks in its capacity as owner of the property, to recover its value * * * * Not only was a greater degree of proof requisite to sup-

port the indictment than is sufficient to sustain a civil action; but an essential fact had to be proved in the criminal case which was not necessary to be proved in the present case * * * * In order to convict a defendant upon the indictment for unlawfully and willfully and feloniously cutting and removing timber from the lands of the United States, it was necessary to prove a *criminal intent,* or at least that he knew the timber to be the property of the United States."

In United States v. Zucker, 161 U. S. 475, at p. 479, Mr. Justice Harlan writes that Coffey v. United States (116 U. S. 436), "is an authority for the position that if the present defendants had been proceeded against criminally on account of the same acts and facts that must be shown in order to sustain this action under the Statute of 1890, and had been acquitted, the verdict would have barred a subsequent civil proceeding based on the same acts and facts, and instituted to enforce a forfeiture or to recover the value of the merchandise forfeited"; and the Court (p. 481) held that an action to recover the value of merchandise forfeited to the United States, unthe Act of June, 1890, chapter 407, "the Customs Administrative Act", is *not* a criminal case, because it is not against a person upon whom a fine or imprisonment, or both, may be imposed"—a case (p. 482) "not involving personal security."

In Chantango v. Abarora, 218 U. S. 476, the head note is, "the general rule of the common law, is that a judgment in a criminal proceeding cannot be read in evidence in a civil action to establish any fact there determined. The parties are not the same and *different rules* of evidence are applicable. Identity of parties will not always operate to make a judgment in a criminal action admissible in a civil action; there must be identity of issue, Stone v. United States, 167 U. S. 178; although as held in Coffey v. U. S. 116 U. S. 436, when the facts are

ascertained in a criminal case as between the United States and the defendant, they cannot be again litigated as between him and the United States as the basis of any statutory punishment denounced as a consequence of the existence of the facts."

The Chantango case went off on a question of Philippine law; but the court notes 218 U. S. 483, "there are peculiarities about the character of the action now under consideration, which may bring it under the principles of Coffey v. United States rather than Stone v. United States; the indemnification here sought being a part of the punishment attached to the offence of which the defendant has been acquitted."

In Coffey's case, 116 U. S., 436 Coffey was charged by an information in rem, for violation of the Internal Revenue Law. He pleaded that he had been acquitted on a criminal information filed in the same Circuit Court, founded on the same sections of the Revised Statutes, and alleged that such criminal information contained charges of violations of law alleged in the present information: held, "that as the issue raised as to the existence of the act or fact, had been tried in a criminal proceeding against the claimant, instituted by the United States and the judgment of acquittal rendered in his favor, *that judgment was conclusive in his favor in this suit.*". The court says, page 443, "there could be no new trial of the criminal prosecution after the acquittal in it; and a subsequent trial of the civil suit amounts to substantially the same thing, with a difference only in the consequences following a judgment adverse to the claimant"; and (at bottom of page 444,) "This doctrine is peculiarly applicable to a case like the present, where in both proceedings, criminal and civil, the United States

are the party on one side, and this claimant the party on the other. The judgment of acquittal in the criminal proceeding, ascertained that the facts which were the basis of that proceeding, and are the basis of this one, and which are made by the statute the foundation of any punishment, personal or pecuniary—did not exist. This was ascertained once for all, between the United States and the claimant, in the criminal proceeding, so that the facts cannot be again litigated between them, as the basis of any statutory punishment denounced as a consequence of the facts. This is a necessary result of the rules laid down in the unanimous opinion of the judges in the case of Rex v. Duchess of Kingston, 20 Howell's State Trials, 355, 538, and which were formulated thus: The judgment of a court of concurrent jurisdiction, directly upon the point, is, as a plea, a bar, or, as evidence, conclusive, between the same parties, upon the same matter, directly in question in another court; and the judgment of a court of exclusive jurisdiction, directly upon the point, is, in like manner, conclusive upon the same matter, between the same parties, coming incidentally in question in another court for a different purpose. *In the present case, the court is the same court,* and had jurisdiction, and the judgment was directly on the point now involved, and between the same parties."

All the authorities agree on the reasons which in most instances, exclude the record in a criminal case as a bar in a civil proceeding, at common law.

At common law, no party could testify in his own behalf.

The sovereign is distinct from the prosecutor. Very rarely does the sovereign have a civil and a criminal proceeding for the same offence. Hence, generally, the parties are different. The rules of the preponderance of proof are different.

1 Greenleaf on Evidence, Sec. 537.
Jones on Evidence, Sec. 589.
Wharton, Sec. 776.

Herman on Estoppel, Sec. 413, says, "the judgment in a criminal case cannot be used, for the obvious reasons, that the party may have been convicted upon the evidence of the plaintiff, or acquitted by collusion with the prosecutor. *There is no mutuality.* The parties are not the same. The defendant in the criminal action cannot avail himself of any admission of the plaintiff in the civil action. The jury in the criminal trial must be satisfied of the parties guilt etc."

Freeman on Judgments, Vol. 1, Sec. 319, bases the chief reason for excluding the record of a criminal prosecution in a civil case on the ground that the parties are different, and the measure of proof different.

Judge Freeman in a note to Mitchell v. State, 103 Am. State Reps. p. 19, gives a full note on

"Res Judicata in Criminal Proceedings."

The principal case decides; " a record of acquittal or conviction of the defendant in the same jurisdiction, and in which the same parties were litigants, is conclusive, when showing a relevant fact."

At page 21 of the note, Judge Freeman thus refers to the Coffey case, 116 U. S. 436,—"where the previous judgment arose in a case in which the state was the prosecutor or plaintiff, and the defendant in the case at bar was also the defendant, and the judgment was with reference to a subject which is material to the case at bar; the doctrine of res judicata applies. * * * But where the judgment to which it is sought to apply the doctrine of res judicata, was rendered in a civil proceeding to

which the state was not a party, or in a criminal proceeding to which the defendant in the case at bar was not a party, that doctrine does not apply."

At page 23, 103 Am. State Reps., "A judgment in a civil case must *generally* be excluded from the evidence in a criminal prosecution, because the parties are not the same; and, were they the same, it would be improper to receive a judgment in a civil case as evidence of the commission of a crime of which the defendant is accused, for the reason that such judgment may be founded on the mere *preponderance* of evidence not sufficient to satisfy the jury beyond a reasonable doubt. Freeman on Judgments, sec. 319a."

Whatever may have been the origin of the rule excluding a judgment rendered in a criminal proceeding from evidence in a civil proceeding, and vice versa, the rule certainly loses force as applied to this case.

1. There is the identity of party.

2. The defendant is offering the judgment in the *civil* case as a matter of defense on this Indictment; hence, it cannot be said that the Government is being prejudiced because in the *criminal* case, guilt must be proved beyond a reasonable doubt;—and if the Government is required to establish its case on this prosecution only by a preponderance of the evidence, then the rule of evidence would be the same in both cases.

3. Many of the authorities state that one of the reasons operating at common law, was, that in a criminal proceeding, an individual might testify in favor of the state, while the defendant was precluded from testifying at all; or that the prosecuting witness, in a criminal proceeding, might testify for the State, but could not testify in a civil case to which he was a party. But today every

person can testify in any case, except where death has sealed the lips of the other party.

If in the Stone case, 167 U. S. 178, the Government had first brought suit to recover the timber or its value; and if it had then been decided that the Government *did not own the property,* but that it was the property of Stone, no Government Official would have undertaken after that, to charge Stone with stealing from the Government timber which had been adjudicated to be his property,—in a prior proceeding settling the right, the title, and the status, in favor of Stone.

There are cases in which a party charged with larceny, has sought to put in evidence a decision made in a civil suit between private persons, to the effect that he was the owner of the property; and in those cases the record in the civil suit has been excluded for the reason that the *parties were not the same.*

Mr. Freeman states, 103 Am. State Reports, at page 27: "It seems that ownership cannot *generally* be proved by previous judgments rendered in a civil proceeding. Thus in State v. Hogard, 12 Minn. 293 (Gil.191), upon trial for larceny, evidence as to the finding of a jury in a civil action upon the question of ownership of the subject of the larceny, was held not competent, since it was binding between *the parties* thereto and their privies. So, also, in People v. Leland, 73 Hun, 162, 25 N. Y. Supp. 943, in a prosecution for larceny where the defense is that the property stolen is *partnership property* belonging jointly to defendant and the complaining witness, it was held that a judgment in a civil action brought by defendant against the complaining witness deciding that no partnership ever subsisted between them, was not admissible in evidence. And in Hill v. State, 22 Tex. App. 579, 3S. W. 764, the question of ownership became material. The defendant was on trial for perjury com-

mitted in a prosecution of another person for illegally branding a calf, he having testified that he owned the calf in question, and had never sold it. He sought to introduce a judgment in his favor in a civil suit trying the title to the calf, but the court refused to admit the judgment *because* the parties were not the same as in the prosecution at bar, and was not rendered in a case of a public nature, and was not sought to be used by way of inducement or to establish a collateral fact."

In this Indictment a Criminal Proceeding.

We cannot assume that the proceeding by Indictment, in the case at Bar, involves a crime, in the Federal sense.

The penalty may be enforced by a proceeding in the nature of a criminal information." 204 U. S. 365.

The Act gives right of review, by the Government, as is usual in Civil cases; otherwise, we would not be here.

An action to recover the value of merchandise forfeited to the United States under "The Customs Administrative Act," "is not a criminal case; because it is not against a person upon whom a fine *or imprisonment*, or both, may be imposed (United States v. Zucker, 161 U. S. at p. 481), it being a case "not involving personal security." (1b. p. 482.)

The Act, Sec. 18 of 1899, provides that if the persons, corporations, or associations owning or controlling any railroad, shall after receiving notice to make alteration * * * * willfully fail or refuse to do so * * * * such persons, corporations or associations shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine.

This statute names a penalty for a misdemeanor.

There is no imprisonment or deprivation of liberty.

It was held in Schick v. United States, 195 U. S. 65, that persons prosecuted by information in a federal court under the Act of 1886 imposing a penalty of $50 for the knowingly purchasing or receiving for sale, of oleomargarine which has not been branded * * * * may waive a jury, since it is a petty offence.

The court at page 68 (of 195 U. S.) runs down through the act and points out that by Sec. 1 "an officer of customs is declared guilty of a misdemeanor and subject to a fine of not less than $1000 and to imprisonment for not less than six months, and the opinion proceeds: "The truth is, the nature of the offense and the amount of punishment, determined whether it is to be classed among serious or petty offenses, whether among crimes or misdemeanors."

We find (p. 70) that in the original draft of the Constitution relating to jury trials, the language was "the trial of all criminal offenses * * * * shall be by jury," but the language as finally adopted was "the trial of all crimes." "If the language had remained "criminal offenses'. it might have been contended that it meant all offenses of a criminal nature, petty as well as serious."

It was remarked in Wilson's case, 114 U. S. 117 at page 425, "The informations which passed without objection in United States v. Isham, 17 Wall, 496, and in Buzzo's case, 18 Wall, 125 were for violations of the stamp laws, punishable by fine only * * * within the last fifteen years, prosecutions by information have greatly increased, and the general current of opinion in the circuit and District courts has been towards sustaining them for any crime, a conviction of which would not at common law have disqualified the convict to be a witness."

Clifton v. U. S. 4 Howard, 242, decided that an information for a forfeiture is in the nature of a criminal proceeding.

In Callan v. Wilson, 127 U. S. 540, it is shown that wherever an offense involves personal liberty, there, it is a crime that can only be tried by a jury.

If the Government is right in its contention that the Act of 1862 made our bridge a legal structure, and that it remained a legal structure *until the secretary of war decided it to be otherwise,* then there is surely no criminal intent or wrong on the part of the owner, not to obey the order of the secretary of war. It is a mere pecuniary penalty that involves no personal turpitude.

It is true that in this case the government is proceeding by indictment, but that cannot change the character of the penalty, or the status of the defendant; because, if the decision in the equity case is an estoppel upon the government in any proceeding to collect a penalty, the government cannot deprive the defendant of the benefit of that decision, by the form in which the government casts the second proceeding.

U. S. vs. Dalcour, 203 U. S. 408.
U. S. vs. Col. Land Co. 192 U. S. 355.

Under the "Safety Appliance Act," the weight of authority is that, a proceeding to collect the penalty prescribed for the violation of the law, is not a criminal proceeding, and the Government is required to make out its case, only by a preponderance of the evidence, as in civil cases, and not beyond a reasonable doubt.

Thornton on "The Employees Liability and Safety Appliance Acts, Sections 178, 181.

The Decree in Equity is a Judgment in Rem.

Inasmuch as the government was the plaintiff in that equity suit and became bound as a party to the record, it is hardly necessay to invoke the doctrine of a judgment *in rem, to* demonstrate that the status of that bridge was fixed by that decision.

The distinction between a judgment *in rem* and a judgment *in personam* is, of course, familiar, but the effect and consequences of both are present in this case.

In the Duchess of Kingston's case, 20 Howell's State Trials 355, Second Smith's leading cases, 11th. Eng. Edition 731, the author of the note at page 752, writes; "A judgment in rem, I conceive to be an adjudication pronounced as its name denotes, upon the status of some particular subject matter by a tribunal having competent authority for that purpose."

Again (p. 754) "A judgment in rem is a solemn declaration proceeding from an accredited quarter concerning the status of the thing adjudicated upon; which very declaration operates accordingly upon the status of the thing adjudicated upon and ipso facto renders it such as it is thereby declared to be." Thus a condemnation of goods in the exchequer not merely declares the goods to be liable to forfeiture, but accomplishes the forfeiture accordingly. A sentence in a Prize Court not merely declares the vessel prize, but vests it in the captors. (754.)

There is no distinction between a judgment in rem and a judgment in personam, excepting that in the one the point adjudicated upon (which in a judgment in rem, is always as *to the status of the res*) is conclusive against all the world as to that status; whereas, in the other, the point, whatever it may be, which is adjudicated upon, it

not being as to the status of the res, is only conclusive between the parties or privies. Ballentine v. Mackinnon (1896) 2 Q. B. 455-462,—Cited 2 S. L. C. 765.

Proceedings Quasi in Rem.

In Freeman v. Alderson, 119 U. S. 187, the court says, "actions in rem, strictly construed, are proceedings against property alone, treated as responsible for the claims asserted by the libellants or plaintiffs. The property itself is in such actions the defendant, and except in cases arising during war for its hostile character, its forfeiture or sale is sought for the wrong, in the commission of which it has been the instrument, or for debts or obligations for which by operation of law it is liable. The court acquires jurisdiction over the property in such cases by its seizure, and of the subsequent proceedings by public citation to the world, of which the owner is at liberty to avail himself by appearing as a claimant in the case. There is, however, a large class of cases which are not strictly actions *in rem,* but are frequently spoken of as actions *quasi in rem,* because though brought against persons, they only seek to subject certain property of those persons to the discharge of the claims."

The doctrine of judgment in rem applies to Divorce and Alimony, treating the marriage relation as the res and the divorce suit as proceeding in rem—a matter of status.

Haddock v. Haddock 201 U. S. 562.

Jones on Evidence at Section 609 classifies as judgments in rem, all those decrees and orders of probate courts as in the settlement of estates, probate of wills etc. Citing—Simmons v. Saul, 138 U. S. 439.

Bouvier defines "judgment in rem— a judgment in

personam is a judgment against a particular person as distinguished from a judgment against a thing, or the *right,* or status."

We submit that the decision in the injunction suit fixed the legal status of that bridge as a judgment in rem, and it also settled all questions of fact and conclusions of law that were raised in that litigation, binding the United States in personam, and that decision, also settled the construction of the Act of 1862, so far as this bridge is concerned.

The Decree in the Injunction Suit was a Final Decree.

The general rule is that a decree, to have the effect of res judicata, must be a final decree.

The point may be raised that the record here shows that this decree was not technically final; but the government is estopped to make that claim, even if there were merit in it.

The government took an appeal from the decree of the Circuit Court *refusing an injunction.* (Rec. p. 149.)

That decree was entered on the 27th day of February, 1905. (Rec. p. 149)

The appeal was taken on the 14th day of March, 1905. (Rec. p. 152.)

At that date, no appeal would lie on the ground of the refusal of an injunction, and the government was only entitled to an appeal, in case of a final decree.

Loveland on Appellate Jurisdiction, Sec. 191, p. 451.

The Act of Feb. 18, 1895 gave the right of appeal to the Circuit Court of Appeals, from an order *denying an injunction,* or refusing to dissolve an injunction, (28

Stats. at Large, 666), but that act was superseded in this respect by the Act of June 6th. 1900, 31 Stat. 660.

Heinze v. Butte Mining Co. 107 Fed. 165, 46 C. C. A. 219.

Westinghouse Co. v. Christensen Co. 104 Fed. 622; 46 C. C. A. 92.

In the Heinze case, the court says:

"A motion is made to dismiss the appeal, upon the ground that no appeal lies from the order fom which it is attempted to be taken. The right to appeal to the Circuit Court of Appeals from an interlocutory order or decree, was created by section 7 of the act which established the court. It was there provided—

" 'That where, upon a hearing in equity in a district court, or in an existing circuit court, an injunction shall be granted or continued by an interlocutory order or decree, * * * an appeal may be taken from such interlocutory order or decree granting or continuing such injunction to the circuit court of appeals.' 26 Stat. 828.

"By the act of February 18, 1895, section 7 was amended to read as follows:

'That where, upon a hearing in equity in a district court or a circuit court, an injunction shall be granted, continued, *refused,* or dissolved by an interlocutory order or decree or an application to dissolve an injunction shall be refused * * * an appeal may be taken from such interlocutory order or decree granting, continuing, refusing, dissolving, or refusing to dissolve an injunction to the circuit court of appeals.' 2 Supp. Rev. St. p. 376.

"By the act of June 6, 1900, it was provided that the seventh section of the act of 1891 be amended to read as follows:

" 'That where, upon a hearing in equity in a district Court or in circuit court, or by a judge thereof in vacation, an injunction shall be granted or continued or a receiver appointed, by an interlocutory order or decree, granting or continuing such injunction or appointing such receiver to the circuit court of appeals.'

"It will be observed that the act of June 6, 1900, amends the seventh section of the judiciary act of 1891, without expressly referring to the amendment of February 18, 1895. We think there can be no doubt that the last act was valid, notwithstanding that it purports to amend a section of the original act which had already been amended by the act of 1895, and that its enactment necessarily operated to *repeal the amendment of* 1895. Wire Co. v. Boyce, (C. C. A.) 104 Fed. 172, and cases there cited. 44 C. C. A. 588."

The appeal in the case reported in 74 C. C. A. was taken March 14, 1905. Record p. 151.

Inasmuch, therefore, as the Government took that equity case to the Circuit Court of Appeals, when the jurisdiction depended wholly upon the final character of the decree or order; the Government is estopped to deny that it was a final decree, or to escape the result of the decision that was rendered in the circuit court of appeals, or in the lower court.

Where a suit was removed to the federal court and all the parties appeared without objection, the decree of the supreme court on the appeal, *is not void for want of jurisdiction*, although it appears on the face of the record, that some of the defendants, not joining in the petition for removal, were citizens of the same State as the plaintiff; but until judicially annulled, vacated or set

aside, it is binding on the parties, and a bar to a subsequent action for the same cause.

Des Moines Nav. Co. v. Iowa Homestead Co. 123 U. S. 552.

In Cowley v. N. P. R. R. Co. 159 U. S. 569, held, page 583, "The case having been removed to the circuit court upon petition of the defendant, it does not lie in its mouth to claim that such court had no jurisdiction of the case, unless the court from which it was removed had no jurisdiction."

In Biggs v. Martin 179 U. S. 206, "the Receiver in this case having voluntarily brought this case into the circuit court by whose appointment he held his office, cannot, after that court has passed upon the matter in controversy, be he heard to object to the power of that court to render judgment therein."

The United States having invoked the jurisdiction of the Circuit Court of Appeals, and succeeded in having that appeal heard, the government cannot afterwards deny the jurisdiction, or deny the final character of the decree.

Davis vs. Wakelee, 156 U. S. 680, 689.

A Decision of an Appellate Court Upon an Interlocutory Decree is Final.

In Smith v. Vulcan Works, 165 U. S. 518, the circircuit court made an interlocutory decree, granting an injunction. Upon appeal, the Circuit Court of Appeals reversed the decree, and directed a dismissal of the bill.

It was held that the Circuit Court of Appeals had the authority to dispose of the case, and to settle and decide

the whole matter on the merits * * * "and the merits having been on the injunction appeal, once determined by the appellate court (C. C. A.), were not open to re-consideration at a later stage of the same case, either in that court or in the court below * * * Had the case been heard anew in each court after the first mandate, the only difference in the result would have been an affirmance instead of a dismissal upon the second appeal. That difference, not affecting the essential rights of the parties, is no ground upon which this court should exercise its discretionary power of issuing a writ of certiorari."

In Harriman v. N. Sec. Co. 197 U. S. 245, the opinion is, page 287; "counsel insisted that the C. C. A. had practically disposed of the entire controversy on the merits, although its decree only reversed the order of the Circuit Court granting the injunction. We accepted that view * * * notwithstanding the decree was not final. In our opinion, the record presented the whole case to that court in such wise, that it might properly have been disposed of, in terms, by decree in accordance with the well settled rule upon that subject. Mast v. Stover Co., 177 U. S. 495; Castner v. Coffman, 178 U. S. 183."

In re Sanford Fork & Tool Co., 160 U. S. 247, by Justice Gray: "When a case had once been decided by this court on appeal and remanded to the Circuit Court, whatever was before this court, and disposed of by its decree, is considered as finally settled. *The Circuit Court is bound by the decree as the law of the case* and must carry it into execution," and the opinion concludes, page 259, "no question once considered and decided by this court can be re-examined at any subsequent stage of the same case."

On the trial of this Indictment, before the same court that rendered the decision in the Equity cause, it was material to show that the question of the right of the government to enforce that act against this Bridge, had been decided; and that the Circuit Court of Appeals had settled the question,—not as mere persuasive authority, but as binding the parties.

Every fact, except this decision, had been agreed; and the only ground of objection was that the decision was "immaterial", and that the record of a civil proceeding "is not binding in this criminal proceeding." (Record p. 14.)

The equity suit was not a purely civil proceeding, nor was the suit to collect the penalty for disobeying the Secretary of War, a criminal proceeding; and we submit the record was properly admitted.

HARMLESS ERROR.

But, if technical objection would lie on the supposed incongruity between civil and criminal proceedings, the error, if any, of admitting this record, was harmless.

It was agreed, that the parties and the Bridge and structure were the same in both cases; that the government in the Equity suit had prayed and sought an injunction against the maintenance of that bridge and structure; that the Circuit Court had refused the Injunction; that an appeal was taken to the C. C. A., and the decision there affirmed, and mandate sent down, reference being made to the case, and the record and the pages of the reports. (Record pp. 11, 12.)

There was no question whatever for the jury to determine, as to the identity of parties or causes of action.

In such case, *the effect of the record was a matter for*

the court, and not for the jury; but the only way to get it into the case was to put it in during the trial.

Thompson v. Roberts, 24 How. 233.

That record and decision were binding on the court, as soon as brought to the attention of the trial judge, who had come to the bench some time after the Equity case was decided.

The agreed statement of facts, at pages 11 and 12, makes such reference to the record in the equity suit as to substantially incorporate it as a part of the record; and the court trying the case being the same court in which the equity suit was tried, the record thereof was a part of the records of the trial court. It is therefore doubtful whether the putting of that record into the evidence made any change whatever, for the reason that the court must take judicial knowledge of its own records in cases that have been tried and ended in that court.

In Butler v. Eaton, 141 U. S. 240, at page 244, the Supreme Court uses this language—"the judgment complained of is based directly upon the judgment of the Supreme Court of Massachusetts, which we have just reversed. It is apparent from an inspection of the record, that the whole foundation of that part of the judgment which is in favor of the defendant, is, *to our judicial knowledge,* without any validity, force or effect."

III.

The Court properly Directed an acquittal; and the views subsequently suggested are not grounds of reversal

See Assignments of Errors Nos. 3, 4, 5, 6, 7 and 8, Record pages 155-156.

A consideration of Assignment No. 3 will dispose of

all of these—"That the court erred in sustaining the motion of the defendant to direct a verdict by the jury of not guilty, and in directing the said verdict."

The Assignments Nos. 4 to 8 inclusive criticise reasons stated by the court, for giving that peremptory instruction.

There was but one instruction—

"I direct a verdict for the defendant in this case."
(Record, p. 14.)

Where the evidence is such that only a verdict for a defendant would be sustained by the court, it is proper to direct the jury to return that verdict.

Marande vs. Tex. P. R. R. 184 U. S. 173.
Bowditch vs. Boston, 101 U. S. 16.

Upon the grounds hereinbefore discussed, the facts and the law were clearly with the defendant, and we submit that instruction was correct.

After giving the instruction which left no fact to be decided, and no discretion to be exercised, by the jury, the court stated the reasons, as a matter of explanation.

They furnish no ground for reversal, even if wholly erroneous.

In fact the reasons here were no part of the instruction, nor were they, technically, a part of the charge.

Even if these reasons had been given to the jury without a binding instruction, the rule would apply; that where a verdict is so obviously right that no other result could be obtained on the new trial, the judgment will not be set aside for technical inaccuracies in the charge. An erroneous charge does not constitute a reversible error, where it is clear that the verdict was right, and that the error worked no injury.

Walbrun v. Babbitt, 16 Wall. 577.
West v. Camden, 135 U. S. 507, 522.

The question before the Appellate Court is, was the judgment correct?

McClung v. Silliman, 6 Wheat. 598.

Where the court correctly rules that a paper should be rejected, but assigns a wrong reason therefor, the ruling should be upheld.

Silsbey v. Foote, 14 Howard 218.

In Central Pacific R. R. Co. v. California, 162 U. S. 91, the principle is stated—"The fact that the court after giving its decision upon an issue, gives its opinion upon the manner in which it would have decided the issue under other circumstances, does not constitute an error to be reviewed by this court."

Taking, however, the points criticised and the reasons stated by the court, the first portion objected to is Assignment No. 5, page 155, that by the decree in the equity cause, "the legal and vested right to maintain this bridge in its present condition, has been judicially determined by courts of competent jurisdiction,—No matter how erroneous the decisions of these courts may have been, * * * nevertheless such decision *stands unreversed in this case,* and must, therefore, remain the law of it; and as to this particular bridge; and, at least, as between the same parties, be upheld and enforced. Therefore, if by it the defendant has a legal right to maintain this bridge in its present condition, it cannot be prosecuted for doing it."

Assignment No. 7 is to the following excerpt: "The bridge was erected under and by virtue of an Act of Congress in the exercise of its supreme right to regulate such

erections across navigable streams; and its erection as made, was fully and without qualification, approved by the Government Agents and Engineer, as complying in all respects with the Act of Congress authorizing its erection. The right of Congress by subsequent act to enforce other and different conditions calculated to destroy the vested right of the defendant in the premises, does not, in my judgment, exist."

All of the foregoing should be read with the context, contained in the two very brief paragraphs at pages 14 and 15 of the record, where it is evident that the remarks of the court were intended to apply to the elaborate arguments that had been addressed to him, and to satisfy the learned counsel of the government and the interested public, that full attention had been given to the two recent bridge decisions in the matters of the Union Bridge Co., 204 U. S. 364, and Monongahela Bridge Co., 216 U. S. 177 —both of which are discussed.

The first proposition, page 14, merely states the doctrine of res judicata; the second, states the effect of a franchise vested by an Act of Congress.

Assignment No. 8, page 156, should be read as a part of the entire paragraph numbered 3, page 15, where the learned judge amplified the distinction between the two bridges mentioned in 204 U. S. and 216 U. S., crossing rivers and situated wholly within (*intra*) the State of Pennsylvania, and erected under Pennsylvania charters, —and the Parkersburg bridge between West Virginia and Ohio, over which nothing but inter-state commerce would pass.

The Judge had in view the power to establish post-roads as well as the power to regulate commerce, under

Section 8 of Article 1 of the Constitution, the Act of 1862 having declared this bridge a post-road. (Wheeling Bridge case, 18 Howard 421.) And although the prescribing of regulations for navigation is generally referred to the Commerce Clause, 13 Howard, 556, yet, this Act of 1862 presented an adjustment and a regulation of navigation in requiring boats and vessels to avoid interference with the physical property, and with the operation and use of that bridge; and at the same time, the Act provides for a means of expediting commerce between two states, and then follows the matter assigned as No. 8, on page 156: "The power to regulate commerce between the states by Congress, is equal to its power to regulate navigation on navigable waters. Neither power is superior to or greater than the other. Having regulated the erection of the bridge for the purpose of interstate commerce, Congress will not be permited to abate and destroy this means of interstate commerce in the exercise of its right to regulate navigation. * * * It cannot compel the defendant to rebuild its bridge in accord with its wishes and that of the rivermen, but can only in any event, require it to break and destroy its interstate commerce, and thereby cease its interstate commerce carrying in this particular." (Page 156.)

This means that this company cannot be compelled to rebuild its bridge, even if Congress has the power to cause the bridge to be removed. The point suggested was probably not essential to a consideration of the case, and was perhaps looking to the future; but here, again, such remarks were made in deference to arguments that had been addressed to the court, indicating the wide range of previous discussion; and this last proposition numbered 3, on page 14, is not so pertinent as either of

the two previous paragraphs covering res judicata and rights vested by Act of Congress, either of which is conclusive upon the merits.

This Assignment No. 8 may bring into clearer view the effect of this Act of 1862 as laying obligations upon river commerce to avoid interference with a bridge crossing it.

We respectfully submit the judgment should be affirmed.

Respectfully submitted,

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Parkersburg, W. Va., September, 1911.

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